Dental Practitioners' Knowledge of the Management of Child Abuse and Neglect Survey and Development of an Online Training Program

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Dental Practitioners' Knowledge of the Management of Child Abuse and Neglect: Survey and Development of an Online Training Program

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ABSTRACT

Background: There is evidence that dental professionals have an important role in safeguarding children in the dental practice. Dentists have the ability to recognize child abuse and neglect and report suspected abuse to relevant agencies. However, several barriers that prevent dentists from taking action and reporting child maltreatment were reported by others. That is why training dentists in child protection is so essential; training increases awareness and knowledge about signs and symptoms that are related to child abuse and neglect, eliminates misconceptions that might be perceived as barriers preventing reporting child maltreatment, as well as acquiring knowledge about current local pathways regarding referral of child maltreatment. No reported research was found related to knowledge, experience, attitudes and training in child protection for dentists working in Saudi Arabia. Objectives: To cast light on this topic, two studies were undertaken, Firstly, a survey was carried out on dental practitioners working in Saudi Arabia to analyze their experience, knowledge in identifying child abuse and neglect, as well as their attitudes towards reporting child abuse and neglect, barriers preventing reporting and any previous training in safeguarding children they might have taken. Their results were compared to results of dentists living in the UK. The UK group was chosen as a baseline in this study because it was already established that the subject of safeguarding children is an integral part of dental training in the UK. Finally an online training program in basic child protection was then designed for dental practitioners living in Saudi Arabia and was tested and rated using

pre- and post- training questionnaires embedded in the training package and one month post-training survey.

Materials and Methods: The first part of this project comprised a cross sectional self-report questionnaire survey. The questionnaire used assessed knowledge, experience, attitudes, perceived barriers preventing child abuse reporting and history of training in child abuse and neglect. It was pilot tested, then presented in two formats; paper-pencil and online for easy access. A random sample of 600 dentists living in the UK was chosen from the 2009 General Dental Council register. They received both formats and were able to choose the preferred one. Members of the Saudi Dental Society in Saudi Arabia received the online format via an e-mail from the Saudi Dental Society due to absence of postal addresses for this group. The second part of the project consists of developing an online basic child protection training program for dental practitioners living in Saudi Arabia. The content of the training program was developed on the basis of previous studies (Kempe et al., 1962; Becker et al., 1978; Wright & Thornton, 1983; Needleman, 1986; Schmitt, 1986; Da Fonseca et al., 1992; Welbury & Murphy, 1998b&c; Tsang & Sweet, 1999; Naidoo, 2000; Hibbard & Sanders, 2004; Cairns et al., 2005b; Kellogg, 2005; Harris et al., 2007; Leeners et al., 2007; Harris et al., 2009a; Nuzzolese et al., 2009; Asnes et al., 2010; Balmer et al., 2010; Sujatha et al., 2010; Hinchliffe, 2011). An invitation was sent to dental practitioners registered with the Saudi Dental Society to join the research. Volunteers had to complete a 3-4 hour online training program. A certificate from King's College London was used as an incentive for dentists to participate, and 82 participants completed the whole

training package, including pre- and post- training program surveys and a set of questions rating the training program. Sixty-two participants completed the one month post training survey that assessed change of attitudes related to child protection in participants one month after completing the training package.

Results: In the first survey, 168 dental practitioners living in the UK participated in this study and 122 dentists identified from the Saudi Dental Society participated from the Saudi group. Knowledge about child abuse and neglect varied between the two groups. Dentists in the UK group identified more cases of dental neglect throughout a year (67.3 per cent) compared to 29.5 per cent cases by the Saudi group. However, a large proportion (59.0 per cent) of dentists from the Saudi group suspected some form of child maltreatment in their practice in the last 5 years; which was around double the percentage found in the UK group. Dentists living in the UK took more positive action after suspecting abuse when compared to the Saudi Arabian group. The proportion of participants working in Saudi Arabia who did not take any action after suspecting abuse was around three fold that of participants working in the UK. And perceived barriers to reporting child maltreatment were higher in dentists from the Saudi group. Dentists working in the UK had significantly more training in child abuse and neglect while dentists working in Saudi Arabia barely had any previous training (3.3 per cent), although training was found to be an important predictor for knowledge, attitudes and experience with child abuse and neglect in this study.

In the second study; 82 participants completed the whole training package and 62 completed the one month post-training survey. More than half these Saudi

dentists (57.3 per cent) worked in Universities and 54.9 per cent were GDPs. The results of the study show that there was a significant increase in knowledge after taking part in the child protection training program in comparison to their baseline knowledge ($p < 0.001$). Very good appraisals were given to the program upon rating it. Since the training program, 21.0 per cent have or will adopt a child protection policy in their practice, 29.0 per cent identified a staff member to lead on child protection since the program, almost all participants have been aware of child abuse and neglect (CAN) signs in their daily practice and 27.4 per cent have made a report of a suspected case of CAN in the last month since the training.

Conclusions: There is a need for further training and support for dental practitioners in recognizing child abuse and neglect and identifying appropriate care pathways for children who are victims of abuse. The web-based training program in child protection received positive appraisal from dental practitioners and dental students living in Saudi Arabia. The program was effective in increasing knowledge in Saudi dentists and changing attitudes to be more positive and proactive in safeguarding children.

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LIST OF ABBREVIATIONS

AAPD	American Academy of Pediatric Dentistry
BSPD	British Society of Paediatric Dentistry
CAN	Child Abuse and Neglect
CPD	Continued professional development
GDC	General Dental Council
GDP	General Dental Practitioner
NHS	National Health Service
NICE	National Institute for Health and Clinical Excellence
NSPCC	National Society for the Prevention of Cruelty to Children
NFSP	National Family Safety Program
NFSR	National Family Safety Registry
UNCRC	United Nations Convention on the Rights of the Child
WHO	World Health Organization

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1. INTRODUCTION

It has been suggested that dental practitioners are ideally placed to detect the early signs of child abuse and neglect (Da Fonseca et al., 1992), especially since previous studies have reported that injuries to the head and neck region are common findings in physically abused children; ranging between 50-75 per cent of reported physically abused children (Becker et al., 1978; Da Fonseca et al., 1992; Jessee, 1995; Naidoo, 2000; Cairns et al., 2005b; Cavalcanti, 2010). Much progress has taken place in the UK in the last 10 years in terms of CAN training for the dental team. A 2003 inquiry in to the death of an 8 year old girl; Victoria Climbié in the UK due to child abuse was a turning point for health care providers in regards to safeguarding children; Lord Laming made recommendations about training for all health care providers who are in contact with children; “The Department of Health should seek to ensure that all GPs receive training in the recognition of deliberate harm to children, and in the multi-disciplinary aspects of a child protection investigation, as part of their initial vocational training in general practice, and at regular intervals of no less than three years thereafter. The Department of Health should examine the feasibility of introducing training in the recognition of deliberate harm to children as part of the professional education of all general practice staff and for all those working in primary healthcare services for whom contact with children is a regular feature of their work. All GPs must devise and maintain procedures to ensure that they, and all members of their practice staff, are aware of whom to contact in the local health agencies, social services and the police in the event of child protection concerns in relation to any of their patients” (Laming 2003, p. 291). Two years later, in 2005, the General Dental Council’s (GDC) Standards for

Dental Professionals, (Section 1.8) highlighted the dental team's responsibility; "Find out about local procedures for child

protection. Make sure you follow these procedures if you suspect that a child might be at risk because of abuse or neglect" (p.7). Further recommendations were made by the GDC in 2008 emphasizing the dental professional's role in child protection; recommending the use of the Department of Health-funded handbook *Child protection and the dental team* (2006) distributed to all NHS dental practices in England and Scotland to assist dental teams in primary care to identify and report suspected child maltreatment. Since then reporting signs and symptoms of child abuse have become core elements of dental practice (Harris et al., 2006). Furthermore, barriers to reporting suspected child abuse and neglect have also been addressed in the UK by several researchers where structured materials for reporting were provided to overcome such barriers (Welbury et al., 2003). However, there is still no published research about dentists' role in recognizing and reporting child abuse and neglect in Saudi Arabia.

The research undertaken in this dissertation aims to compare dentists working in Saudi Arabia to dentists working in the UK by assessing them using a questionnaire through the following:

a) Explore dental practitioners' knowledge of forms, clinical signs as well as risk factors related to child abuse and neglect.

b) Examine the history of professional experience with recognizing and suspecting child abuse and neglect.

c) Assess history of reporting suspected abuse, knowledge in mechanisms of reporting in addition to attitudes towards reporting suspected abuse and perceived barriers that prevent practitioners from reporting such cases.

d) Explore practitioners' present training and the need for further education in child protection.

e) Should it be the case that knowledge and attitudes fall short of recommended standards; a training program is to be implemented to improve dentists' intention to identify and report child abuse and neglect.

1.1 CHILD ABUSE AND NEGLECT

1.1.1 History

Most child protection legislations were only set in the 20th century, however; child abuse and neglect is not considered a new phenomenon. Historians found that children were maltreated, physically and sexually abused throughout history. For example, Bakan (1971) stated that infanticide was considered a universal phenomenon since it was documented in almost every culture. Due to urbanization in the 18th century, children had an increasing economic value and were often used as cheap labour (Solomon, 1973). There was an increase in child protection and care in the 19th century by Western societies. However, the child mortality rate was still high.

Some do believe that children in the past might have been subjected to harsh circumstances and lower standards of care. And that might have been due to

tough socioeconomic conditions, poor medical and hygienic advancement as well as lack of awareness. However, harsh treatment towards children was not the norm, societies in the past still condemned child abuse and maltreatment (Corby, 2006).

A study carried out to assess the attitudes towards child maltreatment reports in The Times newspaper between 1785 and 1860 found that from the 385 tried cases of child abuse and neglect; only 27 (7.0 per cent) were found not guilty (Pollock, 1983). The first society for child protection was formed in New York; the American Society for the Prevention of Cruelty to Children, and it was formed after the first successful trial for child abuse in 1874. The trial against the step mother of 8 year old Mary Ellen Wilson who was repeatedly beaten and starved was successful because at that time the Society for the Prevention of Cruelty to Animals existed and the prosecution used the argument that a human child was an animal (Munro, 2006). In 1962 Henry Kempe and his colleagues argued that child abuse was much more widespread in the United States than the medical community admitted then. In addition, it was stressed that child abuse was a result of emotional or psychological disturbances of the parent or caregiver in general. Since that time, research on physical abuse gained so much publicity and funding (Nelson, 1984). Physical abuse was first described in a historical paper published in the medical field by Henry Kempe and colleagues in 1962. It was described then as 'battered child syndrome'. Kempe described it as a clinical condition in young children who have been seriously abused physically, and is a frequent cause of permanent injury or death. Prior to that, in 1946, a paediatric radiologist, John Caffey questioned what he

observed; multiple fractures in long bones of young children with subdural haematoma although no previous history of trauma or injury were reported.

Ten years after the trial of 8 year old Mary Ellen Wilson, in 1884 a similar organization to the US one was established, the London Society for the Prevention of Cruelty to Children (London SPCC) which was later renamed the National Society for the Prevention of Cruelty to Children (NSPCC) in 1989 because it had spread over Great Britain and Ireland (http://en.wikipedia.org/wiki/National_Society_for_the_Prevention_of_Cruelty_to_Children) Date Accessed: 26/4/2014. A similar pattern of recognizing child abuse and neglect as a social problem was followed in Britain in the late 1960s and 1970s (Parton, 1979, 1981, 1985). Since then, successive British governments made legislative changes to protect victims of domestic violence, for example, the Parliament of United Kingdom established comprehensive child care services for unfortunate children (The Children Act, 1948). Later on, The Children Act 1989 emphasized family support needs, however further amendments were made after the death of 8 year old Victoria Climbie in the year 2000 although she was seen several times by social services, hospitals and police. The Children Act 2004 created a Children's Commissioner and advocates a data sharing system that encourages professional collaboration to aid experts in identifying children and family needs at early stages (Munro, 2006).

Recently in Saudi Arabia, to measure the magnitude of such a social phenomenon, the National Family Safety Registry (NFSR) was established in 2009 to generate reports of the number of cases based on demographic

dimensions such as age and gender (Al-Eissa et al., 2010). Such reports would be useful for many sectors (e.g., social welfare, education, health facilities, and legal authorities) in the Saudi society to deal with such phenomenon.

1.1.2 Definitions

Diverse social and cultural norms made it challenging to define child maltreatment. Many differences are found in the behaviour of various cultures and ethnic groups. Some cultures find certain behaviours normal while others might recognize them as abusive. That is why vigilant and sufficient care must be taken upon labelling an act as maltreatment. Cases must be assessed within the cultural context of a society to be labelled as an abusive act or not (Corby, 2006). A child is considered abused if he or she “is treated in a way that is unacceptable in a given culture at a given time” (Meadow, 1997; Welbury and Murphy, 1998b). This definition casts light on the perspectives of culture and values towards treating children within different societies. Time also has a fundamental role in defining child abuse here, due to the fact that the perception of child abuse changes over time through the amendment of legislations and public opinion (Welbury, 2007).

Children from some ethnic backgrounds might have smaller stature and low weight compared to other ethnic groups. Those children might be labelled by the inexperienced professional as “failure to thrive” (Fontes, 2008). Some religions might also influence children’s appearance such as Orthodox Jews who only cut the child’s hair in a ceremony on their third birthday as well as

Native Americans and Sikhs who keep their hair long. Some people might think these children are poorly groomed and neglected even though they just follow their cultures' traditions and religions (Fontes, 2008).

Definitions of child abuse and neglect can also vary across systems, e.g.; legal, medical, mental health, economic, child welfare. Child maltreatment also has diverse medical, psychological, social and legal consequences which make it comprehensive in nature where it describes various situations (Bourne, 1979). While the medical team focuses on the physical injury of a child (Helfer & Kempe, 1987; Wissow, 1990), social workers tend to focus on the caregiver, and legal authorities concentrate on the evidence that determine the innocence or the guilt of the abuser. Definitions are broad and nonspecific on purpose to cover all the different aetiologies and presentations of child abuse and neglect (Azar, 1991; Ludwig, 1992).

However, common standards can be found between different cultures in defining abuse and neglect; in 1999 The World Health Organization (WHO) published a report on child abuse prevention and in that report an international definition to child abuse was given, health was also defined as "a state of complete physical, mental and social well-being, not merely the absence of disease" (WHO, 1999).

Child abuse or maltreatment was defined as: "All forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of

responsibility, trust or power." (WHO, 1999, p. 15). According to this definition, there are four main forms of child abuse. The first form is physical abuse; first described by Kempe and colleagues (1962) as 'battered child syndrome'; "which results in actual or potential physical harm from an interaction or lack of an interaction, which is reasonably within the control of a parent or person in a position of responsibility, power or trust. There may be single or repeated incidents" (WHO, 1999). Physical abuse may involve hitting, shaking, throwing, poisoning, burning or scalding, drowning, suffocating, or otherwise causing physical harm to a child. Physical harm may also be caused when a parent or caregiver fabricates the symptoms of, or deliberately induces, illness in a child as reflected by Munchausen by proxy syndrome (Great Britain Department of Education. *Working together to safeguard children*, 2006). Corporal punishment is another form of physical abuse. It is a method of discipline which uses physical force or threat to modify a child's behaviour (Straus & Stewart, 1999). It may include spanking on buttocks and slapping on hand, arm or leg, especially in toddlers and pre-school age children. The use of corporal punishment is nearly universal where many cultures, societies and religious beliefs claim that moderate use of physical punishment is a valid approach to discipline children (Korbin, 1981).However, this method is well recognized to be a risk factor to child physical abuse, especially when the child's undesirable action is repeated, then the caregiver may reapply punishment with more aggression and force (Straus & Stewart, 1999). A national survey across Britain was conducted on 1,250 mothers and fathers of children up to the age of 12 years old in 2003. The results showed that over half (58 per cent) of parents reported using minor physical punishment with their children in the last year, while 9.0 per cent of the

parents reported having used severe physical punishment in the same year (Ghate et al., 2003).

The second form of abuse is emotional abuse which includes the “failure to provide a developmentally appropriate, supportive environment, including the availability of a primary attachment figure, so that the child can develop a stable and full range of emotional and social competencies commensurate with her or his personal potentials and in the context of the society in which the child dwells. There may also be acts towards the child that cause or have a high probability of causing harm to the child’s health or physical, mental, spiritual, moral or social development. These acts must be reasonably within the control of the parent or person in a relationship of responsibility, trust or power. Acts include restriction of movement, belittling, denigrating, scapegoating, threatening, scaring, discriminating, ridiculing or other non-physical forms of hostile or rejecting treatment” (WHO, 1999, p.15). It was also defined as the persistent emotional maltreatment of a child such as to cause severe and persistent adverse effects on the child’s emotional development (Great Britain Department of Education. *Working together to safeguard children*, 2006). It may include any actions of rejection and conveying unworthiness, intimidation and deliberately making fun and bullying them, not giving the child the chance to express their views, terrorization, or isolation of a child, having high expectations beyond their developmental age, discrimination on a daily basis, locking them in restricted spaces, exposure to both direct or indirect domestic violence, preventing them from participating in normal social activities fitting for their age, as well as preventing them from education and learning. (Great

Britain Department of Education. *Working together to safeguard children*, 2006). Some levels of emotional abuse are embedded within all other forms of maltreatment. For example, the child may suffer from emotional abuse as a result of being physically abused in a way that makes him or her feel frightened or in danger (HM Government, 2010).

Sexual abuse is a third form of abuse. It is “the involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not developmentally prepared and cannot give consent, or that violate the laws or social taboos of society. Child sexual abuse is evidenced by this activity between a child and an adult or another child who by age or development is in a relationship of responsibility, trust or power, the activity of being intended to gratify or satisfy the needs of the other person” (WHO, 1999, pp. 15-16). A more specific definition of sexual abuse is “forcing or enticing a child or young person to take part in sexual activities, not necessarily involving a high level of violence, whether or not the child is aware of what is happening. The activities may involve physical contact, including assault by penetration (for example, rape or oral sex) or non-penetrative acts such as masturbation, kissing, rubbing and touching outside of clothing. They may also include non-contact activities, such as involving children in looking at, or in the production of, sexual images, watching sexual activities, encouraging children to behave in sexually inappropriate ways, or grooming a child in preparation for abuse (including via the internet). Sexual abuse is not solely perpetrated by adult males. Women can also commit acts of sexual abuse, as can other

children” (Great Britain. Department for Education *Working together to safeguard children*, 2006).

Neglect or negligent treatment is a fourth form of child abuse. WHO (1999) defines it as “the failure to provide for the development of the child in all spheres: health, education, emotional development, nutrition, shelter, and safe living condition, in the context of the resources reasonably available to the family or caretakers and causes or has a high probability of causing harm to the child’s health or physical, mental, spiritual, moral or social development. This includes the failure to properly supervise and protect children from harm as much as is feasible” (p. 16). Once a child is born, neglect may involve deprivation of primary caregiver, adequate food, clothing and shelter; exposure to physical and emotional harm or danger; lack of access to appropriate medical care or treatment; unresponsiveness to, a child’s basic emotional needs (HM Government, 2010).

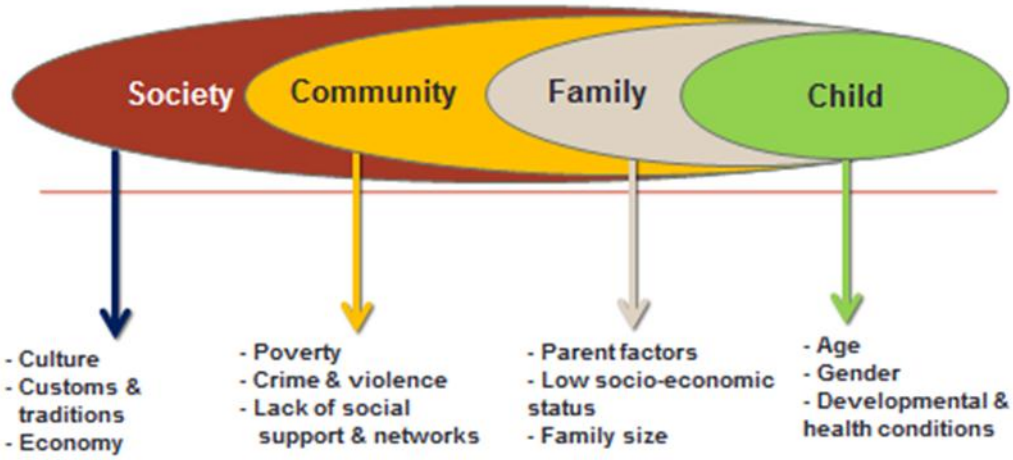
Child dental neglect, manifested in behaviours and/or attitudes related to neglecting the child’s oral health and is defined as “wilful failure of a parent or guardian to seek and follow through with necessary treatment to ensure a level of oral health essential for adequate function and freedom from pain and infection” (AAPD, 2005). The British Society of Paediatric Dentistry (BSPD) defined dental neglect as “the persistent failure to meet a child’s basic oral health needs, likely to result in the serious impairment of a child’s oral or general health or development.” (Harris et al., 2009c). This definition emphasizes repeated negligence. These two definitions complement each other and both should be joined together to create a comprehensive definition of

dental neglect. The word ‘wilful’ in the first definition suggests that failure to seek treatment, for example, is done intentionally by the care giver. The second definition uses the word ‘persistent’ to suggest that a neglectful behaviour in regards to seeking dental treatment is considered dental neglect when the behaviour occurs repeatedly and continuously over a certain time frame. Dental disease such as gross caries should not be described as dental neglect unless wilful and repeated negligence to seek treatment occurs from the care giver. Dental neglect not only includes failure to treat oral disease, but also includes late presentation of severe oral pathology, attending emergency treatments and failure to attend follow-up appointments, failure to treat dental trauma, history of multiple comprehensive dental treatments under general anaesthesia, failure to administer medications such as essential antibiotics when needed (Balmer et al., 2010). Dental neglect in both children and adults is associated with a number of negative outcomes to oral health and overall wellbeing. For example, some oral conditions (e.g., dental caries, toothache, tooth loss, infection and other periodontal diseases), if left neglected or untreated, can lead to pain and oral functional limitations. These negative outcomes have an undesirable influence on learning, communication, nutrition, and other essential activities related to normal growth and development among children. This is against the United Nations Convention on the Rights of the Child’s (UNCRC) recommendations in 1989 which states specifically that children should be protected from all forms of abuse and negligent treatment, and have the right to live a good standard of health and full development.

1.1.3 Causes of child abuse and neglect

Child abuse and neglect occur in complex social and interpersonal circumstances; and therefore there is no single factor that predicts or accounts for the causes of child abuse and neglect. Even the absence of any identifiable risk factors does not mean that the child is protected from abuse and neglect. Identifying the antecedents of child abuse and neglect requires a comprehensive profile of the risk indicators based on the individual, familial, economic, and social contexts to which each child belongs. To achieve such goal, the ecological model (Blesky, 1993) has been suggested to support the notion that environmental factors (e.g., low socioeconomic conditions, poor housing conditions, poor access to social services and programs, and poor community social support networks) may also create high-risk caregiving situations which lead to child abuse and neglect. It also posits that the rates of child abuse and neglect can be responsive to social change as explained in Figure 1.1.

Figure 1.1 Ecological Model by Blesky (1993)



According to the ecological model, there are four main factors beyond child abuse and neglect. First, child characteristics (e.g., age, gender, developmental and health conditions) are one of the most important factors for child abuse and neglect. A study done on 1248 American children found that more than 52.2 per cent of these children were under 4 years old (Da Fonseca et al., 1992), similarly in a retrospective study done in the UK, Cairns et al. (2005b) reported 45 per cent of abused children were under the age of 4 years. Infants and toddlers are solely dependent on their caregivers, creating stresses and the feeling of responsibility towards them. Due to the high levels of stress in caregivers as well as children's helplessness, dependence and inability to express themselves, they can be more vulnerable to abuse and neglect (Dubowitz & Black, 2001). Age of the child is related with differential risk of specific types of maltreatment. It has been reported that child deaths due to physical abuse are most common among young children under the age of 3 years (Jessee, 1995), while children under the age of 12 years face greater risks of sexual abuse, and to a lesser degree children between the ages of 13-16 years (Finkelhor, 1984).

Gender is another factor reflected by female children having higher risks of neglect and abuse. For example, more than 130 million children globally between ages of 6 and 11 years do not attend school, of which girls represent 60 per cent of the total (WHO, 2002). This could be explained by cultural, traditional and economic reasons where for example, female children attend to their younger siblings. Additionally, girls are more likely to be sexually abused than boys (Finkelhor, 1994). Furthermore, child misbehaviour may strain the child-parent relationship, thus become a risk factor for being abused (Shannon,

2009). Compared to their typically developing peers, children with behavioural problems such as disruptive behaviours, aggression, sadness and social incompetence were affected more by abuse (Stith et al., 2009). However, it is worth noting that a child's behaviour is not the sole contributor to abuse; but rather has to do with a more dynamic parent-child mix (Belsky & Vondra, 1989). For example, a parent with personal and psychological resources is still able to nurture a difficult child under stressful conditions.

Children who are born premature and children with cognitive impairment, physical disability, and those suffering from chronic illness are more likely to be of risk for abuse and neglect due to their vulnerability (Shannon, 2009). Children with such disabilities and chronic illnesses also place psychologically vulnerable parents in continuous stressful states due to higher demands, limited communication and/ or mobility (Knutson, 1995).

Caregiver and family characteristics are a second main risk factor for child abuse and neglect. For example, heightened reactivity to stresses, mental health problems, depression and poor anger management may increase the risk for abuse and neglect (Dixon et al., 2005; National Research Council, 1993). Parents and care givers who were raised in non-nurturing and hostile homes can develop unstable personalities during adulthood (Shannon, 2009) such as low self-esteem, antisocial behaviour and mental illnesses (Sidebotham & Golding, 2001; Sidebotham & Heron, 2006). Parents' unrealistic expectations about the development of their children can also contribute to child maltreatment (National Research Council, 1993; Klevens et al., 2000, Stith et al., 2009). Other maladaptive characteristics reported in abusive parents are;

young parental age, history of abuse, substance abuse, lack of knowledge about child development, unwanted pregnancy, negative perception of the child, maladaptive personality, depression, aggression, poor impulse control, neuropsychological dysfunction and delayed development (Sidebotham & Golding, 2001; Powell, 2003; Kotch et al., 1995). Many studies have addressed these factors. For example, Brown and colleagues (1998) found that 19-year old parents have a higher risk of abusing their children when compared to parents from older age groups, these young parents could be subjected to more stresses related to poor finances and other social factors such as feeling isolated from peers and family support (Sidebotham & Golding, 2001). Additionally, children who are the result of an unwanted pregnancy may be a higher risk of abuse (Kempe et al., 1962; Cairns & Welbury, 2009; HM Government, 2010). Lack of experience of children's needs as well as parenting skills may also increase the risk for child maltreatment (Stier et al., 1993). Women who are depressed and are exposed to abuse from their husbands were reported to be more likely to use physical discipline with their children (Hunter et al., 2000). Moreover, similar to women, men who have been victims of abuse, who have high stresses in their lives and those who lack of social support were likely to abuse their children (Klevens et al., 2000).

Gender is reported to be a determinant factor concerning sexual abuse in most cases; a number of studies (Finkelhor, 1994; Grayston & De Luca, 1999) showed that men are the majority of abusers of sexually abused children. Single status may play a role in increasing the incidence of child abuse and neglect (Kempe et al., 1962). Straus and Stewart (1999) in the United States

found that single mothers are three times more likely to use corporal punishment when compared to two parent families.

Having a step father in the family is another risk factor to maltreatment, and especially sexual abuse (Klevens et al., 2000; Radhakrishna et al., 2001). Community characteristics are a third risk factor for child abuse and neglect. Many studies (e.g., Brown et al., 1998; Garbarino & Kostelny, 1992; Kotch et al., 1995) have reported that neighborhoods and societies that are high in poverty, temporary housing and crime rates are highly and consistently linked to child abuse and neglect. Relatedly, congested surroundings and overcrowded households also increase the risk of child abuse (Isaranurug et al., 2001). Korbin in 1981 also reported lack of social support and networks within such societies may increase the risk of abuse.

The fourth risk factor is the social, economic, and cultural characteristics of the society in which the individual lives. These are important factors that shape the parent-child relationship (Korbin, 2002). There is a relationship between culture and abuse as reflected by differences in parenting. What is considered as normal child rearing in some cultures might be seen as abusive in western cultures. For example child labor, forceful feeding of a child and being cared for by other children was not considered abuse or neglectful in some societies in Africa, while it was considered so in the west. In India for instance there is a preference for sons over daughters. On the other hand, what is seen as normal in the west; for example hiring a baby sitter for the children could be perceived as neglectful from a Japanese mother's point of view (Korbin, 1981).

1.1.4 Prevalence of child abuse and neglect in Saudi Arabia and the UK

It is estimated that the total population in Saudi Arabia was 29,994,272 in 2013 (Central Department of Statistics and Information in Saudi Arabia at: http://www.cdsi.gov.sa/english/index.php) Date Accessed: 15/10/2014. It was estimated by the World Population Review that the age group (0-14 years) comprised 32.4 per cent of the total Saudi population, and the age group (15-64 years) was the highest share of the total population of around 64.8 per cent (http://worldpopulationreview.com/countries/saudi-arabia-population/) Date Accessed: 15/10/2014). Regarding the total population in the UK, it was estimated that it grew to 64.1 million in mid-2013 (Office for National Statistics at: http://www.ons.gov.uk/ons/rel/pop-estimate/population-estimates-for-uk--england-and-wales--scotland-and-northern-ireland/2013/index.html) Date Accessed: 15/10/2014. Children of ages 0-14 years were estimated to be 18 per cent of the UK population in 2011; half the percentage reported in Saudi Arabia, while the UK population of ages (15-64 years) was similar to that of the Saudi population (66 per cent) (Office for National Statistics at: http://www.ons.gov.uk/ons/dcp171778_292378.pdf) Date Accessed: 15/10/2014. Despite the large differences in absolute population, the dentist-population ratio for the two countries is similar (3.4 per 10,000 for KSA; 4.0 per 10,000 for UK).

There is little evidence concerning the prevalence of child abuse in Saudi Arabia. According to Al-Mahroos (2007), child abuse and neglect is present in the Arab Peninsula. Compared to most other countries around the world in fact, the prevalence of child abuse in Saudi Arabia is unknown; and the majority of cases of child abuse in Saudi Arabia are unreported (Karthikeyan et al., 2000).

However, insufficient data collection should not be accounted for as low incidence of child abuse. Now, the question is not whether child abuse occurs in Saudi Arabia, but rather what patterns of abuse and neglect children in Saudi Arabia experience (Al-Mahroos, 2007). The NFSP in 2012 reported that 202 children were registered in main hospitals across Saudi Arabia as victims of maltreatment. Some children were exposed to more than one type of abuse. Neglect was the most common type of maltreatment (37.6 per cent); followed by 35.8 per cent physical abuse, sexual abuse was reported in 21.3 per cent of the cases and emotional abuse in 5.3 per cent of the cases. As for gender distribution; 51.0 per cent were males and 49.0 per cent were females; physical abuse (55.3 per cent) and neglect (53.5 per cent) were more common amongst males, while emotional abuse (64.3 per cent) and sexual abuse (60.7 per cent) were more common among females (National Family Safety Program, 2012a).

As for the prevalence of child abuse and neglect in the UK, there is much evidence about an increase of both reported and at risk cases in the last decade. The number of children on child protection registers or subject to a child protection plan in 2013 in the UK is 50,732 children. The number has been increasing; it was 41,780 children in 2009. Neglect was the most common type of abuse; it was either alone or accompanied by other forms of abuse, the second most common type was emotional abuse, followed by physical abuse and finally sexual abuse. In England, 43,140 children were subject of a child protection plan; 2,681 were registered in Scotland; 2,950 were registered in Wales and 1,961 children were registered in Northern Ireland (NSPCC, Child protection registers statistics – UK)

1.2 CHILD ABUSE AND NEGLECT IN DENTISTRY

The dental team has a responsibility to safeguard children; especially those who are suffering or are at risk of significant harm. Their duty is to promote health and development and make sure children grow up in a safe and positive environment. Welbury and Murphy (1998a,b,c) reintroduced the topic of child abuse and neglect and the important role dentists play in safeguarding children through three inter-related articles published in the British Dental Journal; much research on the topic from a dentist's perspective followed in the UK.

The dental team should be able to detect child maltreatment and distinguish accidental injuries from abuse by following three main assessments: a) proper examination of the injury, its extent and location; b) taking a detailed history of how, where and when the trauma occurred from both child and guardian while assessing if the history fits the clinical picture, while also observing if any discrepancies between both reports is present furthermore assessing underlying risk factors if present; and c) observing child behaviour and interaction with the caregiver or parent (Needleman, 1986; Harris et al., 2006; Harris et al., 2007, Harris & Welbury, 2012). The dentist should be aware of the site of injury. Accidental injuries usually occur on bony prominences of the body, such as the knees, elbows and forehead, that is why unexplained bruising or marks in areas not routinely subject to falls or accidents can be indicators of non-accidental injuries; also injuries caused from physical abuse are usually multi-planer while those occurring from accidental trauma are uni-planer (Tsang & Sweet, 1999), therefore the dental team should assess signs and symptoms that seem suspicious such as bilateral bruising on the face and neck; or bruises

in the shape of a hand or finger marks on the cheeks; most likely caused by a slap across the face.

Assessment of the age and developmental stage of the child is also essential when suspecting physical abuse, for example, young children and toddlers who are learning or have just learned to walk are prone to accidents and falls (Harris et al., 2007). On the other hand, bruising in newly born babies and non-independently mobile babies is very rare (Maguire et al., 2005).

Welbury and Murphy (1998b) introduced a check list for dental practitioners when suspecting child abuse which includes five questions; 1) Could the injury be caused accidentally and if so how? 2) Does the history of the injury fit the clinical picture and age of the child? 3) Assess normality of behaviour if clinical signs are consistent with history given 4) The presence of a justification of delay in seeking treatment or care 5) Is the history provided consistent or does it change? The check list also includes five observations; 1) The child-parent relationship 2) The child's reaction to others 3) Reaction towards the dental practitioner and treatment 4) The child's general appearance and behaviour 5) Comments or behaviours made by the child or care giver that may cause alarm. These questions and observations were again emphasized in a paper by Harris & Welbury, (2012) which provides the general dental practitioner with a summary of main points to look for if the dental practitioner had a concern in regards to child abuse and neglect. This check list is an excellent method which makes it easier for dentists to assess a suspected case of child abuse in a systematic manner, it encourages the dentist to focus on important signs of CAN and ask appropriate questions during history taking.

Skin injuries caused by **physical abuse** may be presented in the form of bruising, abrasions, scratches, bite marks, pinch marks or burn marks in the form of objects for example a cigarette burn (Harris et al., 2007). Skin lesions could result from the perpetrator's hand, fist, leg or other objects such as a knife, belt, rod or a stick (Naidoo, 2000).

Bruises and abrasions are the commonest types of injuries (Cairns et al., 2005b). Bruises caused by physical abuse are commonly found on the face (Needleman, 1986; Jessee, 1995), back, abdomen, arms, buttocks, ears, and hands (Maguire et al., 2005). Bruising on the body can be in clusters, in isolation or in a pattern. Multiple bruising can also be present in different stages of healing, and the child could be dressed in clothes not suitable for the weather to hide such injuries, that is why dentists should always be alert.

Caffey (1946) found that children who suffered from subdural hematoma also had fractures in the long bones. Skeletal fractures resulting from abuse were most commonly observed in children under the age of three years old, and multiple fractures were common findings (Kempe et al., 1962; Kemp et al., 2008).

Some cases of child physical abuse may be extremely difficult to diagnose, for this reason the dental team should be well- trained to diagnose and manage such cases. Dental practitioners should consider other conditions which may be similar to child abuse when assessing patients with signs and symptoms of injuries. A differential diagnosis may include birthmarks, which can be mistaken for bruising also conjunctivitis may be mistaken for trauma (Harris et al., 2006),

haematological disorders may cause multiple bruising; that is why screening for bleeding disorders might be necessary, metabolic abnormalities as well as skeletal pathologies (Wright & Thornton, 1983). Dentists might need to investigate if a patient has osteogenesis imperfect (OI) since it is characterized by fragility of bones that may cause patterns of skeletal fractures, as well as blue sclera, deafness, skin and vessel fragility (Kempe et al., 1962; Pandya et al., 2011). Dentinogenesis imperfecta (DI) which is a deficiency in tooth dentin structure causing an appearance of wear, discolouration and tooth fracture may also be mistaken for trauma (Harris et al., 2006). That is why a proper intra oral examination and dental evaluation is recommended in cases of multiple fractures as well as radiographic assessment of the fractured site and the head and neck region (Wright & Thornton, 1983).

In a paper published in 1986 by Schmitt; **Child neglect** was described as failure to thrive due to nutritional neglect, it was estimated then that 50.0 per cent of underfeeding was due to neglect; health care neglect was also described as the caregiver repeatedly ignores the child's need for health care; dental neglect; safety neglect which is failure of the caregiver to provide young children (younger than 4 years) the direct supervision needed, since accidents such as falls, poisoning and burns can be avoided with proper care; emotional abuse and neglect that include deprivation of the child from having a healthy emotional and psychological health and finally physical neglect which include unsanitary environment and clothing, dirty body, untreated head lice, inadequate rest and incomplete immunizations.

Child neglect is reported to be the most common type of CAN (Jacobi et al., 2010), and dentists often focus on signs of physical abuse overlooking the seriousness of neglect which could also be as fatal. Therefore, it is extremely important that the dental professional observes the child's general health, nourishment, hygiene and apparel if it is comparable to the guardian's appearance, since dirty clothes could be indicative of neglect; also if the child's clothing are appropriate for the weather, (Tsang & Sweet, 1999), Moreover, the child's relationship with the caregiver and their attitudes throughout the dental appointment should be observed. If the dentist suspects child maltreatment, further investigation may be needed (John et al., 1999; Balmer et al., 2010). Several signs that prompt health care providers to suspect neglect were discussed in the literature, for example a clinical guideline commissioned by The National Institute for Health and Clinical Excellence (NICE) in 2009 included; medical neglect compromising the health and wellbeing of a child, poor hygiene when the child is persistently smelly and dirty, poor standards of home hygiene, inadequate nutrition and unsafe living conditions (National Collaborating Centre for Women's and Children's Health, 2009).

The detection of **dental neglect** was described to be an obvious responsibility for dentists by Schmitt in 1986. It can be present in the form of untreated dental decay and that could be the first sign of child abuse and neglect. For example, in a paper by Blumberg and Kunken in 1981; two child abuse cases were only reported after the diagnoses of "nursing bottle syndrome". Dental practitioners seem to underestimate their value in detecting CAN. For example, in a study by Manea et al. (2007); 60 per cent of dental practitioners did not consider dental

neglect as a kind of abuse. In a survey posted to members of the British Society of Paediatric Dentistry (BSPD); a high proportion of respondents (81.0 per cent) reported seeing children with neglected dentitions once a week or more frequently, however very few of them made a referral to social services (Harris et al., 2009b). Little guidance about management of dental neglect was available for dental practitioners in the UK up to the Department of Health-funded educational resource; *Child Protection and the Dental Team* which initially raised awareness in recognition and management of dental neglect (Balmer et al., 2010). A policy document on dental neglect was published in 2009 by BSPD highlighting dental neglect and giving recommendations for the dental team, for example; the dental practitioner should consider cases of dental neglect as a healthcare priority; children involved are to be given additional support to access dental services, better communication with specialists in the field of child protection and referrals should be made when needed as well as developing care pathways for the management of these vulnerable children and further research and training was suggested (Harris et al., 2009b). It is also essential that dental practitioners are vigilant in taking accurate history since dental neglect is a form of CAN only when care-givers are aware of the child's need for dental care, however wilfully deny dental treatment (AAPD, 2005), and especially since dental neglect may be present on its own or as a sign of further abuse; it may be found in combination with other types of abuse. A study by Valencia-Rojas et al. in 2008 reported that maltreated children in Toronto, Canada had higher levels of early childhood caries (ECC) and tooth decay compared to the population of pre-school

children. Similarly Montecchi et al. in 2009 reported children who are abused are more likely to also suffer from dental neglect.

A parent or a caregiver's persistent **emotional abuse** causes disruption in the child's personality, emotional wellbeing and development. Emotional abuse can be present in the form of threatening language or verbal humiliation, bullying, calling names or lack of interaction, such as rejection, ignoring the child and denying affection. The parent may have unrealistic expectations triggering heightened levels of stress (Hibbard & Sanders, 2004). Such form of abuse can be present alone or accompanied by other forms of abuse such as neglect and physical abuse. The dental practitioner is able to detect emotional abuse from the child-caregiver interaction and from the child's general behaviour; the child could seem either detached, unable to focus or on the other hand anxious and clingy. These children may exhibit irreversible damage such as delayed academic and social development and later on may develop alcohol and drug related problems (Harris et al., 2009b).

Sexual abuse is not easy to detect since sexually transmitted infections are rarely present in children (Hammerschlag, 2011). Sexual abuse can occur in the oral cavity, though rarely seen, dental practitioners are in a position to detect sexual abuse in children (Kellogg, 2005), therefore they should be familiar with the clinical manifestations of sexually transmitted diseases, such as intra oral ulcers caused by gonorrhroea, syphilis and herpes simplex virus type 2 which is also transmitted sexually unlike herpes simplex type 1 commonly seen in young age groups. Human papilloma virus (HPV) and warts in children were also reported to be present in some sexually abused children (Unger et al., 2011).

To confirm suspicions, suitable culture techniques and tests should be done, as well as thorough history and examination, including assessing child behaviour and child-parent behaviour and risk factors. For instance, some forms of the human papilloma virus can be transferrable vertically from the mother to the child during birth, or horizontally from the hand of the caregiver to the mouth of the child, that is why thorough investigation is necessary (Unger et al., 2011). Children suffering from hepatitis B or C and HIV should also be considered to be victims of abuse until proof of non-sexual transmission is evident (National Collaborating Centre for Women's and Children's Health, 2009). Unexplained injury in the form of petechiae or haematoma in the palate could be an indication of forced oral sex. Other noticeable signs are pregnancy, child disclosure, inappropriate sexual behaviour, and other forms of psychological problems such as delayed development, anxiety, depression, nightmares, bed wetting and self-harm (Harris et al., 2009). Dentists should recognize that most offenders of sexual abuse are family members or family acquaintances, and such abuse is less likely to be from a stranger (Schmitt, 1986; Welbury & Murphy, 1998c).

1.2.1 Oro-facial manifestations of physical abuse

Oro-facial trauma in children commonly presents to dentists in their practice and many signs of physical abuse appear in the head and neck region. The head region is the most vulnerable during physical abuse. In many cases, it can represent about 50-75 per cent of reported physical abuse in children (Becker et al., 1978; Da Fonseca et al., 1992; Jessee, 1995; Naidoo, 2000; Hibbard &

Sanders, 2004; Cairns et al., 2005b; Cavalcanti, 2010), and that is explained by the head region representing the whole being or self (Needleman, 1986) as well as that part of the body being most exposed and accessible (Cairns et al., 2005b). It was also reported that abusive caregivers are less cautious about taking the abused child to the dentist, although they may be reluctant about taking the child to emergency medical services (Da Fonseca et al., 1992). Therefore, dentists and other members of the dental team are in a good position to recognize and report suspected cases of child abuse and neglect (Jessee, 1999), and they should consider child abuse every time a patient with trauma is seen, especially since they are in regular contact with children and their families.

Furthermore, non-accidental injury can be observed in children with some behavioural problems, repeated patterns of injuries, or injuries with non-specific explanations (Patel & Allen, 2010); adolescents' challenging behaviour towards parental authority may trigger violent responses causing injuries (Cairns et al., 2005). Delay in presenting trauma to a professional or old untreated injuries are also signs of abuse (Welbury & Murphy, 1998b; Harris et al., 2006). Examples of non-accidental injuries include a blow to the head with an object or a fist causing blunt impact cranio-facial injuries (Solarino et al., 2008). Jessee (1995) reported that the hand or fist was the most common tool used to cause physical injury (32.8 per cent) followed by hot liquids or foods, paddle, biting and sharp objects. If abrasions and contusions in different areas of the head and neck were found; finger nails and rings should be considered as possible causes. Skin burns and bites are identified by their shape and size. Skeletal fractures

can also be found in physically abused children (Harris et al., 2006). Becker et al. (1978) reported that most common head injuries were fractures followed by subdural hematoma, contusions and ecchymoses and abrasions. Facial injuries caused by abuse were predominantly in the form of contusions and ecchymoses, followed by abrasions and lacerations, then burns, fractures and bites while intraoral injuries involved contusions and ecchymoses followed by abrasions and tooth fracture.

Many studies in the dental literature have focused on the oro-facial signs of physical abuse, a retrospective study of child abuse ratios in the UK between 1998 and 2003 by Cairns and colleagues (2005b) identified the incidence of head and neck injuries in a cohort of 390 physically abused children (61.5 per cent boys, 38.5 per cent girls). Signs of head and neck trauma caused by abuse were recorded in 59.0 per cent of the cases. Bruising was the most frequent injury and it was present in the child's face in 66.0 per cent of these cases. More than one third of the cases had multiple oro-facial injuries. Injuries to the neck and ears were also found in these cases which are difficult to induce accidentally. Interestingly, the oral cavity was not affected and it might have been overlooked by investigators. Being struck by an object was the cause of injury in the majority of cases followed by being slapped then punched. These findings are consistent with an earlier retrospective study (Da Fonseca et al., 1992) carried out on 1248 children who were referred for suspicion of maltreatment in a Medical Center in Minneapolis, Minnesota, from 1985 to 1989. Out of the 511 reported cases of physical abuse, 75.5 per cent involved injuries to the face, head, neck and mouth. The cheeks had the highest number

of injuries, followed by the eyes, ears, nose, and lips, while the most common intra-oral injury was on the palate and mucosa.

Similar findings were also found in Naidoo's (2000) records' analysis of physical abuse cases from 1992 to 1996 in Cape Town, South Africa; among 300 abused children (mean age 4.75 years); injuries to the head and neck were found in 30.0 per cent of the cases. The face was the most often injured site (41.0 per cent) and the cheek had more trauma than any other area on the face, followed by the eyes which included retinal haemorrhage and peri-orbital bruising, followed by lips and ears. In the majority of cases (56.0 per cent); the hand, fist or legs were used by the perpetrator to cause injury rather than being struck by an object. Although injuries to the head and neck were common signs in abused children, dentists did not participate in the examination of these children. In the same context, Phillips and van der Heyde (2006) found head injuries to be the most common cause of death in abused children in South Africa, followed by abdominal blunt trauma, then neglect, burns and strangulation. Injuries to the head included skull fracture, intra and extra oral bruising, laceration, torn fraenum and avulsed teeth. Age of the child should be taken in consideration during history taking, for instance a nose bleed (epistaxis) is considered a common finding in school children, however, it is found to be rare in infants where it is either associated with serious illness or injury, and has therefore been proposed to be a marker of child abuse. However not enough literature has specifically focused on epistaxis to warrant the use of it as a diagnostic sign (Walton & Davies, 2010).

Physical abuse may result in many types of injuries intra and extra orally, such as contusions, burns, or lacerations of the lips, tongue, buccal and alveolar mucosa, palate (soft and hard), gingiva, fraenum, scarring of the corners of the mouth, posterior pharyngeal injuries, tooth fracture, displaced, or avulsed teeth; or facial bone and jaw fractures (Kellogg, 2005). Intra-oral injuries may also be inflicted during forceful feeding of the child with eating utensils, a bottle, hands or fingers, also traumatic intra-oral burns can occur during feeding due to hot foods, liquids or acid substances.

Several studies have addressed the above-mentioned manifestations. For example, Cavalcanti (2010) analysed the referral reports of 1070 Brazilian children from the age of 11 months to 17 years between 2003 and 2006. He concluded that injury to the head and face was found in 56.3 per cent of all non-accidental trauma cases, while intra-oral injuries were only found in 12.4 per cent of the cases. More than half of the cases reported to have intra-oral injuries in the maxilla, around one third of the cases suffered from trauma in the mandible, and 9.0 per cent of cases had trauma in both regions. Out of a total of 133 intraoral lesions; 94.8 per cent were soft-tissue lacerations, mainly in the upper lip (46.4 per cent), followed by the lower lip (34.0 per cent) and the oral mucosa (19.6 per cent). Tooth injuries were only found in 5.2 per cent of these cases. Other studies reported lower incidence of intra-oral injuries, for example a classic paper by Becker et al. in 1978 reported 6.0 per cent of intra-oral injuries out of 260 documented cases of child abuse in 1978, similarly; Jessee in 1995 reported intra-oral injuries in 2.6 per cent of the 266 reviewed cases of child abuse.

Other studies have shown that violence, sport activities, and traffic accidents can be a common cause of oro-facial traumatic injury in children. For example, Marcenes et al. (1999) assessed the type of injuries present in 1087 Syrian school children from the age of 9 to 12 years. They concluded that violence was the most common reported cause of injuries to the permanent incisors (42.5 per cent), road traffic accidents followed (24.1 per cent), then collisions with people or inanimate objects in16.0 per cent and falls in 9.1 per cent of injured children. However, another retrospective study (Rajab, 2003) carried out on 391 children between the ages 7-15 years from 1997 to 2000 in Jordan contradicted these findings. Among all cases of physical abuse, it was found that only 7.0 per cent of dental injuries were due to violence. Solarino and colleagues in 2008 also reported that injuries to the oral, face and head region are commonly caused by accidents and falls during play. Such injuries can result in bruises in prominent areas of the body such as the forehead, nose, chin, palm of hands, knees and shins (Hibbard & Sanders, 2004). Also, torn and lacerated labial and sublingual fraenula are considered regular incidents in toddlers and children due to falls or accidental injury. However, vigilance is important since they can also be caused by a direct blow to the face and forceful feeding (Donaruma-Kwoh & Wai, 2010).

1.2.2 Role of the dental team

As mentioned earlier, dentists' role in safeguarding children has been emphasized by previous researchers in the dental literature (Becker et al., 1978; Welbury & Murphy, 1998b; Welbury et al., 2003; Harris et al., 2007; Owais et al., 2009; Harris & Welbury, 2012). Dentists may be the first health

care providers to come across an abused child, therefore they have an important role in seeking further help and report suspected cases of child maltreatment. The Standards Guidance by the GDC in the UK highlighted the responsibility of the dental team to find out about local procedures for child protection and follow these procedures if the dentist suspects the child is at risk of child abuse and neglect (GDC, 2005). All NHS dental practitioners received a handbook *Child Protection and the Dental Team* in 2006 which is also available online as a PDF file. This handbook provides the dental team information on how to manage a suspected child abuse case and the importance of the role of dentists in child protection. Since then, there has been an increase in child protection training in both undergraduate and post graduate levels. Upon comparing two studies; the first conducted before the publication of the GDC Standards for dental professionals by Cairns and colleagues and the other after the standards were published by Chadwick and colleagues; a difference can be observed. For example; 16.0 per cent of dental therapists did not have any previous training in CAN in the study by Chadwick et al. in 2009 compared to 80.0 per cent in the Scottish survey in 2005a by Cairns et al. Chadwick reported a higher proportion of participants (83 per cent) recording their findings in the dental records compared to the survey done by Cairns et al. (56.0 per cent). Although Cairns reported that 59.0 per cent of dental practitioners felt that the dental team were well placed to recognize signs of CAN, only twenty one per cent suspected abuse and no reports were made. The Standards Guidance booklet (2013) was later developed and became more explicit. For example, it addresses the dental team and states the following; ‘You must take appropriate action if you have concerns about the possible abuse of children or vulnerable

adults. You must raise any concerns you may have about the possible abuse or neglect of children or vulnerable adults. You must know who to contact for further advice and how to refer concerns to an appropriate authority such as your local social services department. You must find out about local procedures for the protection of children and vulnerable adults. You must follow these procedures if you suspect that a child or vulnerable adult might be at risk because of abuse or neglect' (Standards for the Dental Team, 2013, p 77). Dental professionals are not responsible for verifying an abuse case; however they are responsible for recognizing, recording findings and reporting suspected cases of CAN to relevant agencies to do further investigations and management (Hinchliffe, 2011). It is recommended that the practitioner seeks advice from a senior or an experienced colleague (Welbury et al., 2003; Harris et al., 2006). Comprehensive record keeping is vital and would be helpful if it included the child's disclosure of abuse when present; the child and the caregiver's history of findings using their own words if possible, both caregiver and child should be questioned separately using open ended questions and in the presence of a staff member as a witness (Harris et al., 2006). Complete description of the injury should be noted including photographs and x-rays when needed, reasons for concern over the child's wellbeing and why the dentists suspected abuse and treatment done or needed (Hinchliffe, 2011). Discussing the practitioner's concerns with the caregiver is good practice unless it would create a threat to the child, in which case it should be avoided (Harris et al., 2007). If treatment needed is beyond the scope of the treating practitioner a referral should be made to medical/dental specialists and if the child's life is at risk; immediate

referral to the hospital or local authorities for instance the police or social services is recommended (Hinchliffe, 2011).

Regarding dentists' attitudes towards recognizing and reporting CAN, a number of studies (e.g, Cairns et al., 2005a; Lazenbatt & Freeman, 2006; Manea et al., 2007; Al-Habsi et al., 2009; Al-Jundi et al., 2010; Sonbol et al., 2012) have indicated that there is a general agreement among dentists on the importance of the subject and the need for seeking further education and training in recognizing and reporting CAN in both undergraduate and post qualification stages. In 1998, a study by Ramos Gomez found that dentists did not realize their importance in safeguarding children. Welbury et al. in 2003 reported that dentists lacked the confidence and felt unprepared to take the role of child protection, and although all dentists felt they had an ethical responsibility towards safeguarding children who are at risk, but they rarely thought of child protection in their daily practice. Moreover poor record keeping of practitioners who suspected abuse was reported. A study in Australia also found that although there was a high level of interest in the subject, knowledge and training was still lacking (John et al., 1999). Lazenbatt and Freeman in 2006 compared dental GDPs with nurses and doctors in their ability to recognize and report child physical abuse. They found that dental practitioners were the least likely to recognize or report CAN followed by doctors while nurses had the best results including the willingness to be involved in managing abuse cases. Manea et al. in 2007 reported that dentists in Italy were unaware of their role in safeguarding children, although most dentists were aware of their duty to protect children from physical abuse but not so much other types of abuse. Very

few (20/106) had suspected abuse and only 4 dentists took action. Harris et al. (2009) reported that there was some progress in detecting CAN due to post qualification training; however a gap still existed between suspecting abuse and taking action such as record keeping and referral. Al-Habsi et al. in 2009 reported that most dentists believed the subject is extremely important in their practices and majority of dentists reported that dentists are well placed to recognize CAN, however GDPs working in Private practice lacked knowledge in local child protection guidelines and the need for continuing professional development in child protection. Uldum et al. in 2010 also reported the presence of a gap between suspecting and reporting abuse. Only 8.7 per cent of participants received their local child protection guideline. Almost all dentists and dental hygienists stated that they lacked knowledge in their role in CAN. Al-Jundi et al. in 2010 reported that Jordanian dental students are aware of their ethical duty towards child protection but are unprepared to take that role. Sonbol et al. in 2012 also reported that dentists had poor knowledge in detecting CAN and dentists with previous training (42 per cent) had better knowledge. Knowledge in CAN varied between the studies mentioned (Appendix 6.17- Page 277), but overall, it was deficient and moreover, many dentists who received training still do not have confidence in dealing with the issue. Harris and colleagues in 2013 reported that the majority of UK dentists in their study had previous training in child protection and are aware of CAN, however, the number of dentists reporting suspected CAN was less than one third of those suspecting abuse. In other countries such as France, lack of training in CAN was reported and dentists had poor knowledge about who to contact in case of CAN; only 23.7 per cent reported that they could refer an

abuse victim while only 2.2 per cent knew how to contact a battered child support (Drigeard et al., 2012). In Greece, there was little training in CAN, the majority (77.4 per cent) of Greek dentists were not well informed about CAN management, thus only 6 dentists reported abuse in that sample (Laud et al., 2013). Many of these studies showed that training had increased awareness and the ability to detect abuse but dentists were still reluctant of taking action and reporting abuse; a gap still existed between suspecting CAN and reporting it (See Appendix 6.17- Page 277).

1.2.3 Barriers preventing dental practitioners from reporting suspected CAN

Dental practitioners have several reasons for not reporting suspected child abuse cases to the authorities; barriers to referring suspected abuse have been reported in many previous studies (for example, Adair et al., 1997; Ramos-Gomez et al.,1998; Kilpatrick et al., 1999; John et al., 1999; Bsoul et al., 2003; Welbury et al., 2003; Russell et al., 2004; Cairns et al., 2005; Thomas et al., 2006; Lazenbatt & Freeman, 2006; Manea et al., 2007; Al-Habsi et al., 2009; Harris et al., 2009b; Chadwick et al., 2009; Owais et al., 2009; Uldum et al., 2010; Newcity et al., 2011; Sonbol et al., 2012; Drigeard et al., 2012; Harris et al., 2013; Laud et al., 2013) (Table 1.1) all of whom have identified commonly reported barriers preventing dentists from referring child abuse. It is important to realize that failure to refer a suspected case of child abuse is more likely to have significant harm for the vulnerable child (Welbury and Murphy, 1998c). The most commonly reported barriers were lack of knowledge in recognizing

CAN, lack of certainty about the diagnosis and referral procedures of suspected cases of abuse and fear over the child's wellbeing, followed by fear over the family, the dentist and fear of litigation, impact on the practice and confidentiality (For a full review of barriers, see Appendix 6.17-Page 277). Such perceived barriers should be discussed in training programs to eliminate any misconceptions dentists might have and help provide advice, support and guidelines to overcome such barriers and effectively safeguard children (Harris et al., 2009b).

1.2.4 Dentists' experience of child protection training

In a 12 item survey carried out on 155 paedodontists in 1979 in the USA, Malecz found only 7.0 per cent of paedodontists felt they had acquired sufficient training in safeguarding children while three quarters of participants had no training and most paedodontists were interested in learning more about child abuse and neglect either through articles published or attending lectures. In 1998, Ramos Gomez reported that 28.0 per cent of dentists in USA had formal lectures in child protection in their dental curriculum. Almost 10 years later, Harris et al. (2009a) reported similar findings where only 26.0 per cent of dentists in 2005 reported undergraduate training (before UK recommendations on child abuse in the Standards for dental professionals). In the USA, a big leap was made in CAN training, probably as a result of legislation made early on. Becker et al. (1978) mention that as part of federal legislation, all health care providers, including dental practitioners are mandated to report suspected or confirmed cases of CAN, and dentists cannot be sued if wrongfully

suspecting CAN as long as it was done in good faith. Thomas et al. (2006) reported that 100 per cent of senior dental students received training in CAN and similar results were reported in the USA by Newcity et al. in 2011.

Welbury et al. in 2003 reported that most recently trained dentists in the UK reported to have received more undergraduate lectures in child maltreatment in comparison to older dentists. Similarly, Harris and colleagues in 2013 reported that an improvement is observed; more dentists in Scotland have received formal training in child protection; only 15.0 per cent of participants never had any form of CAN training in that sample.

In Italy, Manea et al. in 2007 found that education in CAN was lacking among Italian dentists where only 9.0 per cent had previous training and similar findings were reported in Brazil (El Sarraf et al., 2012; Losso et al., 2012) France (Drigeard et al., 2012) and in Greece (Laud et al., 2013).

Most relevant studies reported that a large number of participants are interested and eager to learn about CAN even if they had previous training (John et al., 1999; Lazenbatt & Freeman 2006; Manea et al., 2007; Al-Habsi et al., 2009; Uldum et al., 2010; Drigeard et al., 2012; Harris et al., 2013; Laud et al., 2013)

Most participants believe that CAN training should be part of a vocational training in the UK (Russell et al., 2004; Cairns et al., 2005a) and similar results were reported in Northern Ireland by Lazenbatt and Freeman in 2006 and in Denmark (Uldum et al., 2010) see Appendix 6.17-Page 277.

Table 1.1 Items included in previous studies exploring the dental team's knowledge, experience and training in CAN

Study	Materials	Sample	Knowledge	Cases seen	Barriers	Education & Training
			Aetiology Signs Management	Suspected Reported		
Adair et al. (1997)	postal survey	500 GDPs 200 PDs	x ✓ x	x x	✓	x
Ramos-Gomez et al. (1998)	postal survey	2005 dentists	✓ ✓ x	✓ ✓	✓	✓
Kilpatrick et al. (1999)	telephone questionnaire	122 dentists	x ✓ x	✓ ✓	✓	x
John et al. (1999)	interview/ phone interview	347 dentists	x ✓ x	✓ ✓	✓	x
Bsoul et al. (2003)	postal survey	383 dentists	x x x	✓ ✓	✓	x
Welbury et al. (2003)	structured interview	23 GPs	x ✓ x	✓ ✓	✓	x
Russell et al. (2004)	postal survey	431 doctors, dentists and nurses	x ✓ ✓	✓ ✓	✓	x
Cairns et al. (2005a)	postal survey	375 GDPs	x x ✓	✓ ✓	✓	✓
Thomas et al. (2006)	survey in classroom	233 dental students & 76 dental hygiene students	x ✓ ✓	x x	x	✓
Lazenbatt & Freeman (2006)	postal survey	419 nurses, doctors & dentists	x ✓ ✓	✓ ✓	✓	x
Manea et al. (2007)	structured interview	106 dentists &senior dental students	✓ ✓ ✓	✓ ✓	✓	✓
Al-Habsi et al. (2009)	postal survey	82 GDPs & 23 specialists + consultants	x ✓ ✓	✓ ✓	✓	x
Harris et al. (2009a)	postal survey	490 dentists & dental professionals	x x x	✓ ✓	✓	✓
Harris et al. (2009b)	postal survey	490 dentists & dental professionals	x x x	✓ ✓	x	✓

Chadwick et al. (2009)	postal survey	396 dental therapists	x x x	✓ ✓	✓	✓
Owais et al. (2009)	postal survey	342 dentists; 253 GDPs & 89 specialists	x ✓ x	✓ ✓	✓	x
Uldum et al. (2010)	postal survey	1145 dentists & dental hygienists	x x x	✓ ✓	✓	✓
Al-Jundi et al. (2010)	survey distributed by hand	441 UG & PG students	✓ ✓ ✓	x x	x	✓
DeMattei & Sherry (2011)	survey	67 dental hygiene students	x x ✓	x x	x	x
Newcity et al. (2011)	web-based survey	678 dentists	x x ✓	✓ ✓	✓	✓
Sonbol et al. (2012)	survey distributed by hand	265 dentists	✓ ✓ x	✓ ✓	✓	✓
Azevedo et al. (2012)	postal survey	187 dentists	x x x	✓ ✓	x	x
Losso et al. (2012)	postal survey	56 dentists	x ✓ ✓	✓ ✓	x	✓
El Sarraf et al. (2012)	postal survey	69 dentists	x ✓ ✓	✓ ✓	x	✓
Jordan et al. (2012)	survey in classroom	544 UG and PG students	x ✓ ✓	x x	x	✓
Drigeard et al. (2012)	postal survey	228 dentists	✓ x ✓	✓ ✓	✓	✓
Harris et al. (2013)	postal survey	628 dentists	x ✓ ✓	✓ ✓	✓	✓
Laud et al. (2013)	postal survey	368 dentists	x x ✓	✓ ✓	✓	✓

A large number of studies of the dental team's knowledge, experience, attitudes and training in child abuse and neglect are present in the published literature, however only a few comprehensively cover all aspects of CAN. Most cover experience in terms of suspecting and reporting CAN, but the analysis of knowledge, training and attitudes towards CAN is less frequent. The sample size varied between these studies, it ranged from 23 to 2,005 participants. The type of participants also varies between these studies, in some cases, participants were GDPs, however in others, there were specialists, dental students, hygienists, nurses and other dental professionals. No standard method of data collection was used, and no standard questionnaire was used in these studies, all these factors make it a challenge to compare between all of these studies. The present study will seek to correct these limitations by drawing on previously used questions in order to allow comparison across settings, and covering the full range of attitudes, experience and knowledge regarding both the experience of CAN and training in identification and management of suspected cases.

1.3. CHILD ABUSE AND NEGLECT IN THE ARAB PENINSULA

All countries in the Arab peninsula are bound by the articles of the United Nations Convention on the Rights of the Child (UNCRC, 1989) which protect children from all forms of physical and sexual abuse (Article 19 and 34) and from inhumane and degrading treatment or punishment (Article 37). Moreover, this convention calls for taking all appropriate legislative, administrative, social, and educational measures to protect the child from all forms of abuse, violence, exploitation and neglect. Although all countries of the Arab peninsula have approved the UNCRC, Yemen is the only country in the Arab Peninsula that legally banned physical abuse and humiliation of children, although these laws seem inadequate in Yemen because they are not enforced effectively, possibly as a result of cultural influences which regard some practices; e.g., corporal punishment is seen as socially acceptable (Al-Mahroos, 2007; Alyahri & Goodman, 2008).

In a review of literature relevant to child abuse and neglect in the countries of the Arab Peninsula; Kuwait, Saudi Arabia, UAE, Qatar, Bahrain, Oman and Yemen, Al-Mahroos (2007) concluded that child abuse in the Arab Peninsula seems to follow similar patterns found in other Western countries. However, most of the studies representing abuse cases in these Arab countries were hospital- based case studies of physical abuse, such as skin lesions and bruising, fractures, internal organ injuries, and head trauma which was responsible for most fatalities. Munchausen syndrome by proxy was another form of abuse discussed; there were limited reports in regards to sexual abuse, which might reflect the social taboo around the issue rather than its absence. One case study presented neglect of an infant, causing esophageal obstruction

with a foreign body. Corporal punishment was the main reason behind physical abuse in Yemen; it is tolerated and accepted as a form of punishment. Interestingly, the author did not find any published articles about child abuse reports in both UAE and Qatar; lack of data does not indicate the absence of child abuse and neglect; it rather indicates that this serious problem is overlooked. Risk factors of child abuse and neglect reported in the Arab Peninsula were similar to those discussed in Western countries; for example, the most common risk factors were poverty, divorced parents, young age of mothers, minor girls' marriage, polygamy, and social acceptance of corporal punishment (Al-Mahroos, 2007). Although health care providers in these studies were able to manage most medical conditions caused by abuse, they still failed to protect children from further abuse which might have led to fatalities, especially in younger children (less than 1 year old), this could be due to lack of awareness of health care providers' ethical responsibilities towards safeguarding children, training deficiency in recognizing and reporting child abuse as well as the absence of child protection policies and legislation in some of these countries.

1.3.1 Saudi Arabia

Saudi Arabia signed and ratified the United Nations Convention on the Rights of the Child (UNCRC) in 1996, and since then child abuse and neglect has become more spotlighted at major health facilities throughout the country (Al-Eissa & Almuneef, 2010). The medical literature started discussing child abuse and neglect in Saudi Arabia over two decades ago (Al-Mugeiren & Ganelin,

1990). It was the first time that healthcare professionals recognized child abuse as a serious phenomenon affecting the well-being of children in the country. Most published studies on child abuse were hospital-based case studies identifying types of child abuse present in the country. These studies aided in increasing awareness among health care providers about child maltreatment, but might have had little to do with understanding the scope of the problem. Lack of accurate official statistics about the incidence and prevalence of child abuse and neglect could have made it difficult for healthcare providers and multidisciplinary parties (e.g., lawyers, judges, police, sociologists, psychologists, physicians) to recognize the magnitude of the phenomenon. In addition, healthcare providers lacked the necessary training for detecting and reporting cases of child abuse and neglect. As a result, they were unable to precisely define child abuse and neglect, classify its types, and identify the contributing risk factors (Al-Eissa & Almuneef, 2010). The first published article on child abuse in Saudi Arabia was a case study describing Munchausen by Proxy (Al-Mugeiren & Ganelin, 1990). The authors described in this paper the unfortunate bizarre and unexplained illnesses in a 17 month year old boy who was admitted more than once to the hospital. Previous family history showed similar occurrences with his siblings. Soon after in 1991, Al-Eissa published an article describing seven case reports representing different types of CAN; physical abuse and corporal punishment, child neglect and poisoning. A case report describing Munchausen syndrome by proxy was published by Al-Jumaah et al. in 1993. Out of 435 admissions to the burns unit over an 8 year period at the North West Armed Forces Hospital in Tabuk city, 2 cases were due to intentional child abuse (Al-Shlash et al., 1996). Al-Ayed (1998) also reported

thirteen cases of child abuse and neglect which presented in the ER of King Khalid University Hospital in Riyadh over a one- year period, from July 1996 to June 1997. This number is considered too small, especially since the ER sees an estimate of 30,000 emergency cases yearly. The ages of the children ranged from new-born to 11 years, of which six were males and seven were females. There were four cases of physical abuse, three cases of sexual abuse, four cases of neglect resulting in one child death, a suspected case of Munchausen syndrome by proxy and a case of child labor with neglect. Another example was a report by Karthikeyan and colleagues (2000) whom also carried out a study to assess child abuse cases in the city of Khamis Mushayt. The sample involved two cases of physical abuse (an 11 month old female and a 3 year old male) and one case of sexual abuse (seven year old boy). Unfortunately, no appropriate management or follow up of these cases was done, and this could owe to the lack of legislation and guidelines in protecting children. Similar case reports on different types of CAN in Saudi Arabia have been published (e.g., Kattan, 1994; Al Ayed et al.,1998; Kattan et al., 1995; Al-Odaidan et al., 2000; Al-Haidar, 2008). Unfortunately, in many of these cases, children failed to come for follow up or returned to the same environment with no proper support or intervention other than treating the child's injuries. This could owe to the absence of organized services for victims of child maltreatment up to the early 2000s (Almuneef and Al-Eissa, 2011). Al-Eissa in 1998 described child maltreatment as a serious and persistent phenomenon that not only affects the child, but the society as a whole. He describes risk factors, the need of a multi-disciplinary approach to deal with the problem and the importance of having local policies that manage child maltreatment in the presence of a national

Committee on Prevention and Management of Child abuse and neglect. Other studies from Saudi Arabia were in the form of reviews introducing different types of child maltreatment to increase awareness among Saudi health care providers and provide information about diagnosing and treating such cases; Baeesa and Jan published a paper in 2000 about various aspects of trauma to the central nervous system through 'The shaken baby syndrome' which might have increased awareness about this type of physical abuse seen especially in infants. Other papers discussed cutaneous medical conditions or lesions that can mimic child physical abuse (AlJasser & Al-Khenaizan, 2008) and sexual abuse (Al-Khenaizan et al., 2005) to increase awareness among the medical profession, and especially those working with children, of different pathological conditions and reduce misdiagnosis of CAN. In 2009, Raboei conducted a retrospective study of child sexual abuse in the Department of Paediatric Surgery at King Fahd Armed Forces Hospital in Jeddah between 1987 and 2007. Out of 54,000 patient records, 87 cases of child sexual abuse were recognized; 42 children were between 2 and 8 years old and 36 victims were between ages 9-25 years. The perpetrator was known to the family in 53.8 per cent of the cases and the father was involved in 37.2 per cent of the cases reported. As for gender distribution, almost three quarter of the victims reported were females (71.2 per cent). The author highlighted the attitudes of social workers and the police towards child sexual abuse after it was identified and reported in the absence of a legislative system, social workers and the police were reluctant to acknowledge child sexual abuse. The importance of protecting children and especially those who are even more vulnerable, such as children with disabilities and handicaps was also highlighted. He also mentioned

that this study does not represent the population; thus a national registry is essential. A study by Elarousy and Al-Jadaani in 2013 describes a type of child abuse that is rarely highlighted; the authors described emotional abuse as ‘the most hidden and underestimated form of child maltreatment’. In this study, children of ages 12-18 years were approached in three large malls in the city of Jeddah and given a questionnaire that included questions in the form of sentences that reflect different forms of emotional abuse. Although a hundred families were approached, only 60 agreed to participate. Females reported a higher incidence of emotional abuse in comparison to males, and the majority (90.0 per cent) of children had at least experienced one form of emotional abuse in the form of rejection and 61.7 per cent reported experiencing at least one form of ignoring or terrorizing types of emotional abuse. The Pearson correlation coefficient was calculated between demographic characteristics of the parents and emotional abuse experienced to sum up the risk factors. Some of the risk factors reported in this study were chronic illness of one of the parents, lack of education, work of mothers and poor bond between the mother and child. Ibrahim et al. (2008) conducted the largest cross-sectional study on abuse in Saudi Arabia, where 1897 female university students in the city of Jeddah were recruited to participate between 2007 and 2008. The questionnaire investigated exposure to physical, emotional and sexual abuse. Students were asked if they were exposed to violent behaviour such as beating, being dragged by the hair or pinched in the ear and being fed chilli representing physical abuse. In regards to emotional abuse and negligence, students were asked if they were exposed to verbal humiliation, rejection and emotional detachment of the parents and threatening actions. As for sexual abuse,

students were asked if they were exposed to various inappropriate sexual behaviours during their childhood. Answers to the survey revealed an alarming high rate of child abuse among students; 68.3 per cent of participants were victims of abuse during their childhood. Around one quarter of the students recalled being exposed to two types of abuse and 13.2 per cent had experienced all types of abuse. Half of the participants were victims of emotional abuse; 45.1 per cent reported being physically abused and around one quarter of the students were victims of sexual molestation. Risk factors included domestic violence, educational level of the mother, drug abuse and psychological problems in either parent.

The first hospital in Saudi Arabia to develop a program for safeguarding children was King Faisal Specialist Hospital and Research Centre (KFSH & RC) in Riyadh in 1994. A Child Advocacy Committee was initiated to detect and report all cases of child abuse. This policy was adopted by the hospital administration from a model used in North America. Hospital security was involved and reports would go to the Riyadh legal authorities (Kattan, 1998).

Starting the year 2000, the national media made public several fatal incidences of CAN, and played a significant role in casting light on the importance of having legislations and services to protect children's rights and prevent maltreatment toward them. They managed to facilitate raising public awareness of child abuse and neglect practices in the country. These efforts were the initial step toward developing an official child protection program (Al-Eissa & Almuneef, 2010). Since then, in 2004-2005 the General Directorate for Social Protection under the Ministry of Social Affairs was formed and developed 17 Social

Protection Committees in different provinces. These multidisciplinary committees serve women and children who are victims of domestic abuse. Soon after, in 2005, the Human Rights Commission (HRC) and the National Society for Human Rights (NSHR) were formed (Almuneef and Al-Eissa, 2011). The NFSP, a quasi- governmental agency devoted to the prevention of abuse to children and women and domestic violence in Saudi Arabia was also formed in 2005. It provided multidisciplinary services in child protection that included; national media, lawyers, judges, police, sociologists, psychologists and physicians. Moreover, in 2007-2008, the National Health Council, which is the highest health service authority in Saudi Arabia recognized thirty nine main hospitals in 13 regions around the country to have Child Protection Centres (CPCs) (Al-Eissa & Almuneef, 2010; Almuneef & Al-Eissa, 2011). In 2012, it was reported that two more CPCs were developed, giving a total of 41 CPCs distributed over major hospitals in Saudi Arabia (The Saudi National Family Safety Program, 2012a). These centers spread across all the provinces of the kingdom from the Northern Border and the province of Jofe in the north to both Najran and Asir provinces in the south and from the Eastern Province in the east of Saudi Arabia to Makkah and Madinah regions in the west.. However, the three main and most populated regions or provinces are the Eastern Province, Riyadh named after the capital of Saudi Arabia and Makkah region, where the Islamic capital is; the city of Makkah. Therefore more than half CPCs are located in major hospitals in those three regions (The Saudi National Family Safety Program, 2011).

Each CPC comprises of a paediatric consultant or a paediatric surgery consultant, a sociologist and a psychologist or psychiatrist. In 2009, a National

Family Safety Registry (NFSR) was established by the NFSP; the CPCs had hands-on training in accessing and registering data and reports (Al-Eissa et al, 2009). The registry links all hospital-based child protection centers in Saudi Arabia via a web-based online registration system. King Faisal Specialist Hospital and Research Centre (KFSH&RC) developed and maintains the NFSR as well as many of the health sector registries for Saudi Arabia (The Saudi National Family Safety Program, 2011). In case of suspecting CAN, the CPC should be contacted to report the case, however if a CPC is not available in the workplace, social workers within hospitals or police should be contacted. Suspected CAN cases are then referred to the nearest CPC which functions under the Ministry of Social Affairs, where evaluation as well as short and long-term services, counseling, home visitations are provided when needed (Almuneef and Al-Eissa, 2011).

Reporting CAN cases is mandatory for all healthcare professionals. Although this law was sanctioned in 2008 by the Minister of Health (Almuneef & Al-Eissa, 2011), only one study was found to report healthcare providers' knowledge, experience and attitudes towards child abuse and neglect in Saudi Arabia. Habib (2012) conducted a cross-sectional study by distributing a questionnaire to paediatricians attending a conference at King Abdel-Aziz University in Jeddah. The author found that paediatricians had adequate knowledge about some important features of CAN; deficient knowledge was considered when the score was below 79 per cent, however they lacked knowledge in child neglect, including medical neglect, they also lacked knowledge about referral procedures, although paediatricians are known to be in a favorable position to recognize child maltreatment or any discrepancies between the child and family

members, since they are in frequent contact with children and their families. The results of this study reflect under reporting CAN in Saudi Arabia.

In 2010, a child protection hotline was developed (Almuneef & Al-Eissa, 2011; The Saudi National Family Safety Registry Annual Report, 2010) in order to give children and care givers advice or referral procedures when needed, government based and non-government agencies are contacted if severe action is needed, such as Ministry of Social Affairs, police, Ministry of Education, Human Rights Commission, National Society for Human Rights and others (The Saudi National Family Safety Program, 2012b).

A retrospective study covering the period January 2000 to December 2008 by collecting data from the Suspected Child Abuse and Neglect (SCAN) team established in the city of Riyadh at King Abdul Aziz Medical City for the National Guard that served abused children presenting to the medical city, reported finding a ten-fold increase in reported CAN cases. The increase of cases was from 6.4 per year in 2000-2004 to 61.5 cases per year in 2007-2008 (Al-Eissa & Almuneef, 2010). This increase in reporting child abuse and neglect reflects a greater awareness, a willingness of care providers to address these issues, and an increased recognition of child abuse and neglect. Out of the 202 reported cases of child maltreatment in 2012, most cases were from Riyadh (30.2 per cent), followed by the Eastern Province (22.3 per cent) and Makkah region (21.8 per cent). Those three regions have 65 per cent of the country's CPCs and represent two thirds of Saudi Arabia's population (The Saudi National Safety Program, 2012a).

Almuneef and Al-Eissa, (2011) discussed in a paper future steps that need to be taken to protect children from abuse in Saudi Arabia, which not only includes child protection; (already undergoing in Saudi Arabia), but taking it further to child maltreatment prevention. Five conditions were suggested by the authors to reach a state of readiness for child maltreatment prevention; A political and public will that acknowledges the need to deal with the problem of CAN; establishing child protection policies and legislations and mandatory reporting, multidisciplinary collaboration in child protection, effective data collection using the NFSR and increasing awareness of professionals dealing with children about child protection and providing them training. An initiative has already taken place to achieve these conditions in Saudi Arabia in the last decade, however more research is needed to understand the scope of the problem, risk factors, knowledge and training among health care providers as well as national awareness and legislation. In a report that measures readiness of Saudi Arabia to implement large scale evidence based child maltreatment prevention programs, in which the instrument used for this study was developed by the World Health Organization (WHO); a low level of readiness was found. An in-depth personal interview was conducted on two groups; key informants who are leading decision makers on the subject of child maltreatment prevention in Saudi Arabia and the second group comprised specialists in the field of child protection. The overall score of key informants (43/100) was slightly higher than specialists (40/100) on giving a readiness score to implement large-scale child maltreatment prevention programs in the country. Recommendations were reported to help strengthen the child protection system in the country before taking further steps (The Saudi National Safety Program, 2012b).

1.3.2 Bahrain

In 1991, the Bahraini Ministry of Health formed The Child Protection Committee (CPC) which includes paediatricians, child psychiatrists, social workers, community nurses as well as legal advisors. The CPC is responsible for assessing and providing treatment for all child abuse and neglect cases. To assess the prevalence of child abuse and neglect in Bahrain, Al-Mahroos and her colleagues (2005) conducted a retrospective review of the collected data about 157 abused children archived in the Child Protection Committee records, psychiatric hospital records, and Salmaniya Medical Complex. The results of their survey showed that the mean age of the abused children ranged from 7 to 14 years; where 53.0 per cent were males and 47.0 per cent were females. The total number of physically abused children was 60 (63.0 per cent males, 37.0 per cent females), while 97 were sexually abused and only 3 children were diagnosed for neglect. The abusers were males in 52.0 per cent of the cases, while 48.0 per cent were females. Table 1.2 displays the types of physical injury and their prevalence in the above sample of abused children.

Table 1.2 Types of injuries and their prevalence in 157 physically abused children in Bahrain (Al-Mahroos et al., 2005)

Type of Injury	**Percent**
Bruises	45
Cuts	16
Burns	27
Swelling	25
Fractures	25
Head injuries	19
Abdominal injuries	5
Other injuries	14
Critically ill	19
Death	7

In relation to sexual abuse, girls represented 55.0 per cent of cases; while boys represented 45.0 per cent. The high percentage of boys here could be explained by the social and cultural context of restrictions over females, where a great cultural emphasis is placed on the value of girls' virginity while greater freedom is given to boys. Health care providers might have felt they had a professional requirement to report CAN cases, due to the absence of mandatory reporting laws, thus abused children were referred to CPC mostly by health professionals. The low percentage of reports came from other parties (3.0 per cent from police and 5.0 per cent from schools). Similar results were reported by the largest retrospective review of hospital records of sexually abused children in Bahrain between the years 2000 and 2009, which was published in 2011. Four hundred and forty medical records were examined, with an almost equal number of victims from both genders. The study revealed an increase in reported cases of sexual abuse which is likely due to an increased awareness among health care providers, especially since they were the main reporters of sexual abuse (53.0 per cent). It was also reported that just over one quarter of children disclosed abuse. Among the risk factors were illiteracy among parents, divorced parents, unemployment and low socioeconomic status (Gillham et al., 1998; Al-Mahroos and Al-Amer, 2011). In 2012, similar findings were also reported in a retrospective review of 237 cases of physically abused children evaluated between 2000 and 2009 by the same authors. The later study revealed an increase of reported cases of physical abuse over time; reported cases came mostly from health care providers and very few came from schools. Physical abuse was observed in males more than females and was mostly seen in children of ages 6-12 years. Most perpetrators were male adults;

however, parents were responsible for 64.0 per cent of physical abuse cases, while the same risk factors as in the previous study were reported in this study (Al-Mahroos & Al-Amer 2012). Barriers preventing 140 physicians in Bahrain from reporting suspected child maltreatment were discussed in a study by Ashoor et al. in 2012. The study showed that physicians had acceptable knowledge of signs of child maltreatment and risk factors, however inadequate history, lack of knowledge in referral procedures and fear of conflict with the child's family were the main barriers reported in this study. In cases of suspected cases, physicians in this study preferred to contact the child protection committee and social workers.

1.3.3 Kuwait

Corporal punishment is considered acceptable in Kuwait. A cross sectional survey (Qasem et al, 1998) of Kuwaiti nationals was conducted to describe the attitudes of 337 Kuwaiti parents (61.0 per cent mothers, 39.0 per cent fathers) toward physical punishment. From the parents interviewed, 86.0 per cent accepted using corporal punishment as a way of behavioral disciplining. In cases of serious child misbehavior, more than half the parents (54.0 per cent) accepted beating as physical punishment, 15.0 per cent agreed to locking a child in a room; and 9.0 per cent agreed to burning as a form of punishment. Although there is a widespread of agreement on corporal punishment, however ethnic background and education level differentiated Kuwaiti parents' attitudes; thus parents from Bedouin families suggested a relatively more traditional upbringing where high expectations are made on children to adhere to tradition,

rigid family values, obedience and discipline. As a result, physical punishment is regarded as normal and in accordance with traditions when dealing with deviance. Younger parents with higher levels of education expressed less agreement with corporal punishment as a way of dealing with misbehaving children.

In an attempt to assess the magnitude of child abuse and neglect, Al-Ateeqi and her colleagues (2002) conducted a retrospective analysis of 60,640 medical records of children in two regional hospitals in the city of Kuwait (see Table 1.3). Only 16 cases were suspected of abuse when the injury to the child could not be explained as accidental. Lack of awareness and any legal obligation to report a suspected case of maltreatment might explain the underestimated child abuse cases reported in this study. Moreover, the absence of legislation protecting children in Kuwait was the reason why although parents who were the offenders in 75.0 per cent of these cases had the right to refuse treatment for their children, discharge children before proper diagnosis or treatment was obtained by health care providers as well as refuse services provided by social workers. In this study the fatality rate was 12.0 per cent. Similar results were found in reported cases in Saudi Arabia (e.g., Al-Eissa, 1991; Kattan, 1994; Al-Ayed, 1998). Table 1.3 gives more detail about the reported cases and their outcomes. Successful outcome was reported in this study when the victim's family agreed to supportive family intervention by both the paediatrician and the social worker who are working together on that case. Mandatory reporting as well as the formation of a National Child Protection Committee to deal with child abuse in all hospitals that include paediatricians, social workers, the police and

the judicial system were recommended by the authors to help protect children from CAN.

Table. 1.3 Findings in 16 abused children in Kuwait (Al-Ateeqi et al, 2002, p132)

Case	Date of admission	Sex	Age	Finding	Abuser	Outcome
1	12/6/1991	F	6 yrs	bruises, cut wounds, intracranial haemorrhage	Father	Child died
2	7/11/1992	F	1.5 yrs	Convulsions, apnoeic episodes, intracranial haemorrhage	Mother	Successful
3	11/7/1994	M	3.5 yrs	Rectal bleeding, perianal lacerations, patulous anus	Household member	Emigrated
4	14/9/1994	F	3 yrs	bruises, burns, cut wounds	Mother	Successful
5	13/6/1995	M	3 mths	Encephalitis-like picture, intracranial haemorrhage	Father	Successful
6	26/3/1996	M	9 yrs	bruises	Father	Lost to follow up
7	1/7/1996	M	1.5 yrs	repeated administration of a corrosive, recurrent mouth ulcerations and pneumonias (MSBP)	Mother	Child died
8	13/11/1996	M	2.5 yrs	bruises, burns, fractures	Mother	Successful
9	9/6/1997	M	1.5 yrs	bruises, burns, fracture	Father	Lost to follow up
10	6/7/1997	M	2 mths	bruises, torn frenulum	Mother	Successful
11	27/4/1998	M	9 mths	bruises, retinal haemorrhage, prolonged repeated seizures, intracranial haemorrhage	Babysitter	Lost to follow up
12	29/5/1998	F	3 yrs	bruises	Mother	Lost to follow up
13	12/8/1998	M	9 yrs	Bruises, burns	Mother	Lost to follow up
14	27/9/1998	M	9 mths	intracranial haemorrhage, fractures, seizures, neurologic sequelae	Unspecified	Lost to follow up
15	1/10/1998	F	2.5 yrs	recurrent vaginal discharge, sexually transmitted disease (gonorrhoea)	Unspecified	Successful
16	28/10/1998	M	4 mths	bruises, burns	Babysitter	Successful

M= male; F= female; MSBP= Munchausen syndrome by proxy.

Successful outcome was reported in this study when the victim's family agreed to supportive family intervention by both the paediatrician and the social worker who are working together on that case.

In another cross-sectional survey by (Al-Moosa et al., 2003), a total of 117 paediatricians working in medical wards and casualty departments in 6 public hospitals in Kuwait were asked to report their knowledge, experience, and attitudes towards child maltreatment. The results showed that 66.7 per cent of them perceived child physical abuse to be a rare phenomenon and 48.0 per cent perceived child neglect as a rare problem; while 32.8 per cent considered it very common. Interestingly, corporal punishment was accepted by a large proportion of participants in this study; 65.0 per cent of respondents did not perceive beating the child as a discipline for smoking to be abusive, similarly 62.0 per cent accepted corporal punishment as a form of discipline for using foul language and 44.0 per cent for failure in school. The study showed 28.0 per cent of paediatricians had often suspected abuse cases, and 60.0 per cent often suspected neglect cases. However, very few (17.0 per cent) made a report after encountering a definitive abuse case. Under reporting (80.0 per cent) was mainly due to lack of knowledge of legislation related to reporting child abuse and the lack of knowledge in pathways taken for reporting suspected child maltreatment.

Al-Fayez et al. (2012) conducted a study reporting the prevalence of physical, psychological, and sexual abuse in 4,467 high school students in Kuwait; lifetime psychological abuse was found to be reported by 14.6 per cent of participants, and lifetime physical abuse was seen in 3.4 per cent of students. Female students reported higher incidences of emotional and physical abuse compared to males. Interestingly, sexual abuse had a higher incidence among

boys, reflecting segregation in Arabic cultures. Risk factors were also reported in this study, the main factor was the poor parental relationship.

1.3.4 United Arab Emirates (UAE)

There has been an effort to increase awareness and knowledge in child protection among health care providers in the UAE, especially since the law in the UAE legally requires all health care providers, including dentists to report suspected abuse (Hashim and Al-Ani, 2013). Hashim and Al-Ani conducted the first study investigating 578 UAE dental students' attitudes and knowledge in regards to child physical abuse in 2013. The results showed that around one-quarter of the students did not know where to report child maltreatment; although over 80.0 per cent agreed that dentists should have a legal obligation to report child abuse and the majority (94.3 per cent) believed it was an ethical duty. Even though dental students were eager to help in safeguarding children, they lacked knowledge in different aspects of child physical abuse. The authors suggest including formal training in child protection in the dental curriculum in the UAE.

1.3.5 Yemen

Yemen is one of the most populous countries in the Arabian Peninsula and one of its poorest. It has a rapidly growing population where about three quarters live in rural areas. A questionnaire and interview surveys were conducted by Alyahri & Goodman (2008) to compare attitudes towards harsh corporal

punishment of mothers and care providers of children aged 7-10 years in both rural and urban cities. The study reported severe forms of corporal punishment such as hitting with a belt, stick or other object was more common in rural mothers (58.0 per cent) than mothers in urban areas (23.0 per cent). Although both groups were found to hit children using their hands, yet urban mothers were more likely to use non-physical methods compared to rural mothers with their children. The most significant risk factors found in this study were; the gender of the child; harsh corporal punishment towards males was significantly higher than females, rural residence, lower maternal education and the number of children at home; the greater the number, the more risk for child abuse. Yemeni children with behaviour and emotional disorders were two to three times more likely to experience harsh corporal punishment, however this finding did not establish a causal connection (Alyahri & Goodman, 2008). In a study conducted to assess the magnitude of emotional abuse in school children by teachers living in the city of Aden; Ba-Saddik and Hattab in 2012 reported that the prevalence of emotional abuse in a sample of 1066 school students was 55.2 per cent. Boys suffered from emotional abuse 10 times more than females did in this study. Teachers were responsible for 45.6 per cent of emotional abuse incidences. Children who came from extended families were more likely to be abused in schools, and this was explained by the social learning theory where the aggressive nature of the children was learned in the home or neighborhood from observing and imitating such behaviours in school. In this study, emotional abuse was also related to the father's level of education. A father with a higher education level had a positive role in protecting his child from abuse in school.

Reports about child abuse and neglect in general in the Arab Peninsula are still very scarce, let alone studies related to the dental team. Lack of adequate data about child abuse does not imply a low occurrence of child abuse in this region, but rather a low- rate of reporting by healthcare professionals. However, there is an emerging interest in this serious problem which requires legislation protecting children from abuse as well as reliable and clear reporting pathways and procedures, awareness and training in detecting and reporting child maltreatment and collaboration between organizations and teams specializing in safeguarding children.

1.4 TRAINING IN CHILD PROTECTION

Continuous professional development (CPD) has been an integral part of adult learning in many fields including dentistry. CPD advances individuals' skills in different areas relevant to the field of expertise, it refreshes current information as well as fulfills licensing or registration requirements. Studies have shown that the most common barrier preventing dental practitioners from taking proper steps to assess and respond to child abuse and neglect is a lack of confidence in recognizing CAN signs and symptoms (Welbury et al., 2003; Cairns et al., 2005; Lazenbatt & Freeman, 2006; Harris et al., 2009b; Chadwick et al., 2009; Owais et al., 2009; Sonbol et al., 2012). Insufficient education in child protection was reported to be a problem faced by dental practitioners in different countries (Lazenbatt & Freeman, 2006; Manea et al., 2007; Uldum et al., 2010; Losso et al., 2012; El Sarraf et al., 2012; Drigeard et al., 2012; Laud et al., 2013). The subject of safeguarding children has become an integral part of dental

education; training programs in signs of abuse or neglect in vulnerable groups, and what procedures are taken to report such cases have become part of the undergraduate dental curriculum in UK dental schools (Committee of Postgraduate Dental Deans and Directors, 2006). Undergraduate dental training in Saudi Arabia comprises a six-year Bachelor of Dental Surgery Program (BDS) in addition to internship training for one year. The BDS program includes a series of didactic, laboratory, pre-clinical patient simulation as well as clinical training in all dental specialties. Paediatric dentistry is introduced in the third year; however no comprehensive training in child protection is present.

Ivanoff and Hottel (2013) presented a multidisciplinary comprehensive curriculum model in identifying different types of child abuse, managing and reporting suspected CAN catered for dental students. The curriculum is divided into four phases that use both traditional and problem-based learning including workshops, lectures, videos, role playing, and case scenarios both in the classroom and in the clinical setting. This curriculum not only increases knowledge, but also helps students in refining their communication skills when dealing with such sensitive problems. Moreover, CPDs in safeguarding children are also available for dental practitioners; however only a few were evaluated for their effectiveness as a training tool for the dental team. Needleman et al. (1995) evaluated the effect of a state wide CAN educational program on dental practitioners and hygienists in Massachusetts by asking them to fill out a survey sent by mail. The results of the survey showed that almost all dentists and hygienists exposed to the program presentation or material indicated that the CAN educational program had increased awareness and knowledge in child

protection; they also felt more likely to detect CAN as a result. A low response rate was also reported by the authors; a reluctance to respond to the survey could have been due to an increase in suspecting abuse and failure to report it. This point was later observed when a large number of participants responded to the question asking if they had suspected abuse, while very few answered the question about what actions they took after suspecting CAN. However, findings of the study still showed that the educational program had positively influenced one third of dentists and hygienists to report suspected abuse.

In the UK, Welbury et al. (2001) evaluated a specially developed computer assisted learning program for dental practitioners that aimed to improve the understanding of oro-facial signs of child physical abuse by sending them a floppy disc containing the program accompanied with a survey to rate it. The program included tutorials and self-assessment multiple choice questions. After taking part in the study, 95.0 per cent of the respondents considered their knowledge of non-accidental injury (NAI) to be above average. The majority of participants gave the program high ratings and found it to be attainable for the busy life style of dentists, and preferred it compared to other training methods. A low response rate (39.0 per cent) in this study could owe to the likelihood that participating dentists are more likely to be interested in the subject and are more likely to be familiar with using a computer assisted learning tool, since 80.0 per cent rated their computer skills as average or better than average. All these factors might not have reflected attitudes of other GDPs in the UK, however, such a training tool can be considered for dentists who have similar qualifications as those in this study, especially that the study was done in 2001,

and since then, internet use via computers and tablets have expanded and is now incorporated into peoples' daily lives, thus the barrier of computer illiteracy is being removed.

In 2005, Harmer-Beem administered a survey containing 10 statements for dental hygienists living in the USA to rate their own knowledge in recognition of child maltreatment and perceived likelihood to report abuse before and after taking part in PANDA (Prevent Abuse and Neglect through Dental Awareness) Coalition of Maine Training Program and the University of Minnesota Family Violence: An Intervention and Training Model for Dental Professionals. There was a significant difference between the pre and post-training answers. Dental hygienists were more likely to report to the correct agency, they had better knowledge of what actions to take, as well as having better knowledge of their ethical and legal responsibilities towards the child after taking part in the training program. It is important to note though that the survey in this study was related to abuse in general, not CAN specifically and the sample size was too small to represent the population of dental hygienists.

A study in the UK by Harris et al. (2011) assessed NHS dental practitioners' experience with an educational resource on child protection for primary care dental teams which was developed by the Department of Health in England in 2005 '*Child Protection and the Dental Team*' in both handbook and website forms. The study aimed to find out whether participants remembered receiving the child protection resource, used it and found it useful in their practice two years after the CAN educational resource was made available for NHS dental practices, and although it was made available online and in hard copy yet more

than one third of participants did not read it. More than three quarters of NHS dental practitioners had an increase in knowledge in recognizing signs of CAN, understanding responsibilities and actions needed when suspecting CAN after using the child protection resource. Furthermore, 54.0 per cent of respondents reported that dental practices identified a staff member to lead on child protection, while 61.0 per cent of practices adopted a written child protection policy as a result. This study not only reports change in knowledge, but also a positive change of attitudes towards CAN in the dental practice.

Soldani et al. 2008 designed three audits that evaluated knowledge levels of CAN of dental staff working in a hospital in the UK over a six week period. Knowledge was assessed at baseline, followed by two assessments to evaluate the improvement and retention of information following an interactive training program in CAN which included a presentation and focus group discussions. The sample (n= 16) comprised of dentists and dental care professionals such as hygienists, dental therapists, nurses and radiologists. Although more participants dropped out by the third audit, there was still a general increase in CAN knowledge, however retention was deficient especially in indicators of CAN. More details on the studies mentioned are found in table 1.4.

Very few studies have assessed the effectiveness of a child protection training program for dental practitioners. The previous studies revealed a deficiency; several studies from table 1.4 had no baseline to compare answers to before and after completing a training program (Needleman et al., 1995; Welbury et al., 2001; Harris et al., 2011). While Harmer-Beem in 2005 did report comparing participants' answers to a baseline, the participants were dental hygienists and

moreover, the sample size in this study was low. Soldani et al. (2008) also reported evaluating knowledge of CAN at baseline and comparing it over a period of time to evaluate information retention. However, the sample size was also too small, which included only five dentists, since other dental professionals participated in the study. The only study that reported behavioural changes after being exposed to a CAN training resource was Harris et al. (2011).

Moreover, no similar studies have taken place with dental practitioners working in Saudi Arabia; although Habib in 2012 highlighted the need for training in child protection among health care providers, including paediatricians in Saudi Arabia. A study done by Elarousy et al. (2012) assessed student nurses' knowledge and attitudes towards CAN and found that 20.5 per cent of those nurses were victims of CAN and that most information about CAN was gathered from the media or the internet, followed by relevant courses in 37.8 per cent. The results of the study showed that completing CAN courses increased knowledge and improved attitudes of nurses. Another study of school professionals in KSA reported only 1.9 per cent had ever attended any sort of training in child protection; however 69.3 per cent of school professionals were willing to attend child protection training courses (AlBuhairan et al, 2011).

To the author's knowledge, training in child protection is provided for physicians and nurses in the health sector (Habib, 2012); however, no web-based child protection training program was developed for health care professionals or dental practitioners working in KSA. Moreover, no web-based training program in safeguarding children for dental practitioners was rated and assessed by

evaluating baseline knowledge of participants and comparing it with their post-training knowledge, moreover, no post-training assessment was made to evaluate the effectiveness of a web-based program in CAN on behaviours of dental professionals in their practices towards safeguarding children.

Table 1.4: Training programs in CAN for dental professionals

1. Effectiveness of a state-wide child abuse and neglect educational program for dental professionals Needleman, Stephanie, MacGregor, Lynch (1995) USA	
Materials & Sample	• Evaluation of the effect of a state-wide CAN educational program. • The questionnaire was mailed to a random sample of 2,500 dentists and 2,500 hygienists registered in Massachusetts. 534 (21.4%) of dentists and 750 (30%) of hygienists responded.
Knowledge of CAN	• Major source of awareness of the dental coalition to combat child abuse and neglect: MDS journal and newsletter in 72% dentists and 28% hygienists Yankee dental congress in 31% dentists, 36% hygienists District meeting presentations in 19% dentists and 15% hygienists Radio ads in 5% both groups College in 2% dentists, 7% hygienists Other 8% dentists, 16% hygienists • Participants who either attended Coalition presentations or read Coalition material; 96% dentists and 99% hygienists indicated that it had increased awareness and knowledge in CAN. All dentists and 98% hygienists felt more likely to detect CAN as a result.
Rating the Training Program	• N/A

2. Evaluation of a computer-assisted learning programme on the oro-facial signs of child physical abuse (non-accidental injury) by general dental practitioners **Welbury, Hobson, Stephenson, Jepson, (2001)** **UK**	
Materials & Sample	• Evaluation of a computer assisted learning programme with tutorials and self-assessment multiple choice questions on oro-facial signs of child physical abuse. • 40 out of 102 GDPs recruited through the Regional Postgraduate Institute for Medicine and Dentistry responded. 80% were male
Knowledge of CAN	• Before using the program, 10% of users rated their knowledge of non-accidental injuries (NAI) as above average. 40% as below average. • After the program; 95% of users considered their knowledge of NAI was above average.
Rating the Training Program	• 92.5% of responders were very happy with the program. • 60% felt that CAL was better than video, 95% felt it was better than audio tapes, 85% felt it was better than reading journals and 80% felt it was better than reading a book on the subject. • The vast majority of responders rated the programme very highly in its style of presentation, content, and its usefulness as a learning tool. • Respondents liked the style of a tutorial presentation, that allows the user to navigate through material at his/her own pace • Respondents liked interactive self-assessment MCQ at the end of each tutorial.

3. The Perceived Likelihood of Dental Hygienists to Report Abuse before and After a Training Program Harmer-Beem, (2005) USA	
Materials & Sample	• A 10 item statement survey using a 3 point likert scale was used in regards to the likelihood of dental hygienists to report abuse before and after a training program. The program also aimed at influencing and encouraging similar training programs in other locations, and to impact dental hygiene curricula. • The sample consisted of registered dental hygienists who attended a continuing education training program for the recognition and reporting of abuse. A convenience sample of 26 was taken of all registered dental hygienists, 25 completed the surveys.
Knowledge of CAN	• Prior to using the program, 28% had prior training • <u>Before</u> the program: 32% knew their ethical and legal responsibilities towards the child, 20% knew factors contributing to abuse, 8% knew how to date bruising, 16% knew how to phrase open ended questions to determine suspected CAN, 40% would likely make a report to the correct agency if confronted with suspected abuse, only 12% definitely knew how to make a report, and 8% definitely knew what was expected of them after making a report. • <u>After</u> the program; 100% knew their ethical and legal responsibilities for the child, 92% knew factors contributing to abuse, 88% knew how to date bruising, 80% knew how to phrase open ended questions to determine suspected CAN, 100% would likely make a report to the correct agency if confronted with suspected abuse, 96% knew how to make a report after training, and 96% definitely knew what was expected of them after making a report.
Rating the Training Program	• N/A

4. NHS dental professionals' evaluation of a child protection learning resource Harris, Bradbury, Porritt, Nilchian and Franklin (2011) UK	
Materials & Sample	• The Department of Health (England) commissioned a working group to develop an educational resource on child protection for primary care dental teams in 2005; 'Child Protection and the Dental Team' handbook and website. This study assesses whether practitioners from NHS dental practices remembered receiving the resource, had used it, found it useful and had changed their practice as a result. • 1000 self-administered questionnaires were sent by mail and only 473 were returned answered
Knowledge of CAN	• 265 participants read the resource, 76% of them used the resource to improve knowledge of child protection personally, 68% have done so as part of their dental team, and 24% have so as part of wider group learning. • As a result of using the resource, the practice has identified a staff member to lead on child protection in 54%, 61% adopted a written child protection policy, 26% arranged child protection training for one or more of the team. • As a result of using the resource: More than three quarters of the staff from NHS dental practices agreed or strongly agreed that their knowledge increased in: understanding responsibilities regarding child protection, recognizing signs of CAN, knowing what to do if concerned about a child, how and where to find support and feel more confident in knowing when to make child protection referral • Other factors that influenced practitioner's knowledge, attitudes or practice towards child protection: 65% reported being influenced by NHS Primary Care Trust (PCT) Clinical Governance requirements, 52% had been influenced by media reports, 58% were influenced

	by educational or scientific journals and 49% had been influenced by attendance at a continuing professional development (CPD) course on this topic.
Rating the Training Program	• Recommendations for how to improve the resource: 1. Making resource more concise and brief. 2. Increase availability of resource and making it more publicised. 3. Additional information on contact details (phone numbers) for advice/information. 4. Regular updates sent to practices. 5. Some would rather attend a course than read about it.
5. An Audit of a Child Protection Basic Awareness Programme within the Dental Hospital Setting: Are we Effective or Not? Soldani, Robertson & Foley (2008) UK	
Materials & Sample	• Three audits were designed to be presented to a dental hospital setting over a period of 6 weeks to evaluate the level of knowledge of dental staff members at baseline and assess the improvement and retention of information in regards to CAN after being presented with an interactive training program which included a presentation and small focus group case discussions by the Tayside Child Protection Team (TCPT), NHS Tayside. • The questionnaire included categories of abuse, risk factors and responsibility towards CAN. • 16 sets ; five dentists and 11 dental care professionals (DCPs) such as hygienists, dental therapists, nurses and radiographers were included.
Knowledge in CAN	• In all three audits, all the dentists responded that child protection was a matter for the dental team. There was an increased awareness among DCPs where 8/11, 10/11 and 5/5 agreed with the statement at each audit cycle respectively. • In regards to categories of abuse, in all audit cycles, all participants were more aware of physical and sexual abuse compared to emotional abuse and neglect.

	• In regards to neglect, there was an increase in recognizing this as a category of abuse; 5/16 did so in audit One and an increase was observed in audit three 9/10. • In regards to indicators of CAN; failure to thrive was highly recognized throughout the audit cycle. Behavioural problems and multiple bruising were cited by majority of participants in both audits one and two. • In regards to risk factors to CAN; substance abuse was the mostly cited in all three audits and an increased recognition of dysfunctional family as a risk factor. • In regards to what actions they can take when suspecting CAN; majority of participants would discuss the cases with a senior staff or members of the child protection team followed by a paediatrician and a quarter of participants would record findings in the medical records. Very few would discuss the case with the child's guardian.
Rating the Training Program	• N/A

This review of the literature has established that while CAN is a topic of central importance, little is known to the level of knowledge of dental practitioners in Saudi Arabia of CAN. Furthermore there is a need to develop and evaluate training in this topic for Saudi dentists. Therefore two studies are described: A survey of the levels of knowledge, attitudes and practice of Saudi dentists, and the development and testing of a training package in CAN for Saudi dentists.

2. A SURVEY OF KNOWLEDGE, ATTITUDES AND EXPERIENCE OF DENTAL PRACTITIONERS WORKING IN THE UK AND SAUDI ARABIA TOWARDS CHILD ABUSE AND NEGLECT

2.1 BACKGROUND

The dental practitioner plays an important role in child protection as mentioned previously. No published articles were found to report the level of knowledge, experience and training of dental practitioner living in Saudi Arabia. That is why a survey was developed to evaluate experience and knowledge in identifying CAN, types of barriers that prevent reporting suspected cases of child abuse of dental practitioners working in Saudi Arabia, moreover an assessment of current training dental practitioners previously had in safeguarding children. A matching questionnaire was administered to dental practitioners living in the UK to compare their knowledge, attitudes, experience and training in safeguarding children. UK dental practitioners were chosen as baseline in this study since safeguarding children has become an integral part of training for dental staff working in the UK.

2.2 QUESTIONNAIRE FORMAT

The format of the questionnaire was informed by guidance on the design of surveys (Dillman, 2007). Two formats were developed for the same survey; paper-pencil and web-based questionnaire formats. The absence of a registry for dental practitioners living in Saudi Arabia and the inability to reach them by post due to the lack of home postal addresses in Saudi Arabia were the initial

reasons the web-based format of the questionnaire was developed. The survey was sent to dental practitioners working in Saudi Arabia through their e-mail addresses. On the other hand, dental practitioners living in the UK had the option of either using paper-pencil format or web-based format depending on their preference. The paper-pencil format includes seven pages; a front cover page with a high contrast image, the title of the study and the institution to make it memorable for the participants, followed by a cover letter explaining the main objectives of the study, anonymity and confidentiality, followed by the body of the questionnaire (4 pages) and finally a back cover that displays appreciation and positive regards for completing the survey. A comment box was added at the end for respondent to fill in case of any queries or suggestions concerning the study. The e-mail of the researcher as well as the address of the institute were placed below the suggestion box.

The web-based format followed the same outline as the paper-pencil one with minor changes appropriate for an online survey. The user was given the link to the questionnaire and a password in the invitation e-mail. Two links to the same survey were provided; one for the UK group;

https://www.surveymonkey.com/s/dentalsurvey2011

And the other one was for the Saudi Arabian group;

https://www.surveymonkey.com/s/dentalsociety to enable the researcher to identify which group the respondent is from. Entering the link would take the user to a page with the title of the research, basic instructions and a box for entering the password. Entering the password takes the user to the next page which includes the department name, title of the research and the cover letter.

By clicking on the tab ‘next’ the user would enter the body of the survey which includes 9 pages. The user could choose his or her answer by clicking on the tabs provided for each question. It was not possible for the user to move to the next page unless all questions were answered. In case a question was missed and the user clicked on the tab ‘next’, an alert message would appear in red colour to remind the user to fill out the question needed. The online survey like the paper-pencil one ends with a thank you page and a comment/suggestion box.

2.3 QUESTIONNAIRE DEVELOPMENT

The questionnaire was designed in English language on the basis of information gathered from previous similar studies (Ramos-Gomez et al., 1998; John et al., 1999; Kilpatrick et al., 1999; Cairns et al., 2005a; Thomas et al., 2006; Al-Habsi et al., 2009; Chadwick et al., 2009; Harris et al., 2009a & b). Dental practitioners who trained in Saudi Arabia were all taught dentistry in the English language, therefore there was no need to translate the questionnaire in to the Arabic language. Furthermore all conferences and the majority of Continuing Professional Education is conducted in English.

The questionnaire that was developed focused on five main aspects that provided a comprehensive overview of dentists’ knowledge, attitudes, experience and training in CAN: The first included dentist demographics, the second included knowledge about signs and symptoms of child abuse and neglect and risk factors, the third was about experience with CAN in terms of suspecting and reporting abuse, the fourth discussed barriers preventing dental

practitioners from reporting CAN and the final part discussed history of child protection training and attitudes towards training in CAN. The questionnaire was reviewed by two psychologists with knowledge of the area. Content validity of the questionnaire was tested by conducting a pilot test of the survey on a sample of postgraduate students (N=30) studying at the Dental Institute, King's College London. Unfortunately it was not practically possible to conduct the pilot study with the target population, as the researchers were located in the UK. However the pilot sample did include students of Saudi origin studying in the UK. The pilot group was more of a focus group, in which group discussions took place. The postgraduate students were asked to comment on the comprehensiveness of the material covered by the questionnaire, that is the extent to which the measure reflected all aspects of CAN, whether there were any dimensions of CAN that were not covered, as well as asking about the clarity of the question and response formats (Appendix 6.5- Page 242: preliminary version of the questionnaire). We were unable to test the criterion related validity of the questionnaire as there exists no standard measure of the constructs we were measuring. Responses however, resulted in some comments and modifications that were taken into account in the final version of the questionnaire (Appendix 6.6- Page 246).

The questionnaire comprised five main parts.

- The first part included 11 questions surveying dentists' characteristics and demographics; age, gender, nationality, place of work, professional experience, education, country of qualification, specialty, place of practice, hours of practice per week and the number of children seen per week.

As most signs of physical child abuse often manifest in the oro-facial region, dental practitioners are expected to identify children who have been subjected to abuse. Furthermore, child neglect is often also associated with poor oral health in a child (Uldum et al., 2010). To address these issues, the second part of the questionnaire consisted of 4 main questions on knowledge regarding the recognition of different forms of child abuse and neglect (7 items that were all considered to be forms of abuse except for 'non-injurious spanking'), risk factors (13 items), manifestations of physical abuse (6 items) and indicators of child abuse and neglect (9 items which are likely to be indicators of CAN except for two items; bruises on a toddler's forehead and head lice). Similar questions have been utilized in other studies (e.g., John et al., 1999; Kilpatrick et al., 1999).

Several studies (Russell et al., 2004; Thomas et al., 2006; Lazenbatt & Freeman, 2006; Manea et al., 2007; Al-Habsi et al., 2009) emphasized the role of dentists in the management of suspected cases of children abuse and neglect in terms of recognizing and reporting the signs and interventions to be taken. In the present study, the third part of the questionnaire consisted of 6 questions on the dentist's professional experience with child abuse and neglect; the number of children with neglected dentition seen, history of suspected child abuse cases, actions taken, the number of suspected CAN cases seen in the last five years, the number of children seen in the last 5 years that the dentist was informed they were subject to CAN and the presence of a protocol in dealing with CAN in the workplace.

The dentist may be among the first groups of health care professionals to provide abused and neglected children with help. However, several studies reported low numbers of child protection referrals by dental practitioners (Ramos-Gomez et al., 1998; Kilpatrick et al., 1999; John et al., 1999; Bsoul et al., 2003;Russell et al., 2004; Cairns & Welbury, 2005a; Lazenbatt & Freeman, 2006; Manea et al., 2007; Al-Habsi et al, 2009; Harris et al., 2009a; Owais et al, 2009). Moreover, these same studies have identified several deficiencies and the presence of barriers preventing dental care professionals from reporting suspected CAN; therefore, the fourth part of the questionnaire focuses on barriers (11 items) that might interfere with reporting suspected cases of CAN.

Since training in safeguarding children is an integral part of dental education; the fifth part of this survey was developed to address this issue. It comprises 5 questions concerning history of training in child protection and the need for continuing education in recognizing and reporting CAN.

The response formats for all questions were either yes/no answers, multiple choice answers or the selection of a response according to a five-point Likert scale ranging from 5 to 1 (strongly agree, agree, neutral, disagree and strongly disagree). A Likert scale provides specific information when it comes to a respondent's degree of agreement or disagreement, and is considered reliable in approximate ordering of people concerning a specific attitude (Oppenheim, 1992). The body of the questionnaire can be seen in appendix 6.6-Page 227.

2.4 PARTICIPANTS AND METHODS

Ethical approval was obtained for this study from the Biomedical Sciences, Dentistry, Medicine and Natural & Mathematical Sciences Research Ethics Subcommittee (BDM) of King's College London Research Ethics Committee; BDM/10/11-93 (Appendix 6.1- Page 236).

A self-administered questionnaire was sent by post in December 2011 to a sample of 600 dental practitioners living in the UK. These dentists were chosen randomly from a 2009 register. Names of dental practitioners in the register were arranged in alphabetical order, and then around 23 names that start with each letter of the alphabet were chosen randomly from the list. An invitation letter to join the study was sent to this sample (Appendix 6.3- Page 240). The letter also comprised an information sheet (Appendix 6.2- Page 238), a paper-pencil survey that composed of seven pages; as well as a link to the web-based version of the questionnaire by using the survey platform (SurveyMonkey©). Two versions of the questionnaire were designed to provide respondents a choice of how they wished to respond to the survey. A reply-paid envelope was also enclosed with the questionnaire; two reminder letters were sent to the sample. Two reminder letters (Appendix 6.4- Page 241) with two weeks intervals expressed appreciation for responding to the survey and reminded those who had not completed the survey to have it filled and returned (Dillman, 2007; Edwards et al, 2007).

The Saudi Dental Society (SDS) was contacted by the researcher to ask permission to send invitation e-mails to its members. The SDS is a platform that promotes scientific research, dental publication and organizes scientific

conferences and talks related to oral health in Saudi Arabia. It was first established in 1981 and since then has been supported by King Saud University in the city of Riyadh. In the SDS website it states that it has 3088 active members, however upon request, the SDS provided the researcher in 2012 the number of SDS members (n= 7,352).

The SDS also kindly agreed to send invitation e-mails to join this study to its members. A web-based questionnaire was sent via e-mail to all dental practitioners registered with the Saudi Dental Society in February 2012 in order to maximize the representativeness of the sample. Unfortunately there are no published data on the demographic characteristics of Saudi dentists to which the current data can be compared. A cover letter, a link to the survey platform (SurveyMonkey©) and an information sheet were enclosed in the e-mail which stated that responses were anonymised and confidential. Two reminder e-mails were sent with two week intervals with the same link to the survey as suggested by Dillman 2007 and Edwards et al. 2007 to maximize response rates. The reminder e-mails were sent to all members of the Saudi Dental Society, since replies were anonymous and it was impossible to distinguish the dentists who replied from the ones who did not.

All participants were given six weeks to complete the survey before analysis. General dentists and dental practitioners from all specialties were included in this study; however, dentists with less than one year of experience were excluded.

The data was coded and analyzed using the Statistical Package for Social Sciences (IBM SPSS) version 20 statistical software as follows

1. Descriptive data for all demographic characteristics for both the UK and Saudi Arabian groups.

2. Descriptive data for all questions in the survey.

3. Comparison between answers of dental practitioners in the UK and Saudi Arabian groups.

4. Identify potential predictors for knowledge, experience and training in CAN.

2.5 RESULTS

2.5.1 Sample characteristics:

The total number of dental practitioners who completed the survey in assessing knowledge, experience, attitudes and amount of training in child protection was 290 participants. The British group comprised 57.9 per cent (n = 168) and the Saudi Arabian group comprised 42.1 per cent (n = 122) of this sample.

2.5.2 Part one: Demographics

2.5.2.1 Demographics of the UK group

A total of 189 UK dentists responded to the questionnaire out of 600 dentists from the 2009 UK dental register, giving a response rate of 31.5 per cent. Some questionnaires (n= 21) were returned unanswered due to change of address, retirement or because they did not wish to participate in this study thus reducing the total number of dental practitioners in this sample to 168 participants from the UK. Only 13.1 per cent (n= 22) participants completed the web based survey; whereas 86.9 per cent (n= 146) completed the paper-pencil survey. Around 58.3 per cent (n= 98) males and 41.7 per cent (n= 70) females participated in this study. In this sample; 86.9 per cent (n= 146) were UK nationals and 13.1 per cent (n= 22) were from other nationalities. Participants above the age of forty years were 65.5 per cent (n = 110) and 34.5 per cent (N= 58) were of ages 40 years or less. Dental practitioners with more years of experience; more than 21 years comprised 52.4 per cent (n= 88) while 47.0 per cent (n= 79) had twenty years of experience or less and one participant failed to answer this question. Most dental practitioners worked in the private sector 65.5

per cent (n= 110), 17.3 per cent (n= 29) worked for the NHS, 10.12 per cent (n= 17) worked in public hospitals, 7.7 per cent (n= 13) worked in Universities and 13.7 per cent (n= 23) worked in other areas. The majority of this sample 73.8 per cent (n= 124) were GDPs, some dental practitioners had more than one specialty. Characteristics of the respondents in terms of specialties, academic degrees and country of qualification are described in Table 2.1. The mean number of hours these dental practitioners practice dentistry per week was 32.5, SD= 9.27. The majority of dental practitioners see 10-20 children per day 44.0 per cent (n= 74); descriptive statistics for the number of children seen in practice by this sample are described in Table 2.2.

Table 2.1: Descriptive statistics for specialty, last degree obtained and country of qualification of dentists working in the UK

Specialty	UK Sample (N=168) N (%)
1) General Dentistry	124 (73.8)
2) Advanced General Dentistry	5 (3.0)
3) Restorative Dentistry	4 (2.4)
4) Paediatric Dentistry	7 (4.2)
5) Orthodontics	10 (6)
6) Periodontics	1 (0.6)
7) Maxillofacial Surgery	5 (3.0)
8) Prosthodontics	3 (1.8)
9) Endodontics	3 (1.8)
10) Oral Medicine	0
11) Dental Public Health	5 (3.0)
What is the last degree you have obtained?	
Bachelors level	106 (63.1)
Masters level	25 (14.9)
PhD	4 (2.4)
Fellowship	17 (10.1)
Board	2 (1.2)
Other	14 (8.3)
Country of qualification	
UK	141 (83.9)
Other	27 (16.1)

Table 2.2: Descriptive statistics for number of children seen in practice/week in the UK sample

Number of children seen/week	UK Sample (N=168) N (%)
None	8 (4.8)
Less than 10 children	36 (21.4)
10 - 20 children	74 (44.0)
21- 40 children	32 (19.0)
> 40 children	17 (10.1)

2.5.2.2 Demographics of the Saudi Arabian group

A total of 163 dentists working in Saudi Arabia from the total e-mail list of the Saudi Dental Society responded to the web based survey. However, only 122 (74.8 per cent) dentists completed most parts of the survey while 41 (25.2 per cent) dentists only completed the demographic part; and therefore they were excluded from the study. The ratio of males to females was 1:1, consisting 61 dentists in each group. As for nationality, 79.5 per cent (n = 97) were Saudi Arabian and 20.5 per cent (n = 25) were from other nationalities. While 73.8 per cent (n = 90) of dentists in this sample were 40 years old or less; 26.2 per cent (n = 32) were above the age of 40 years, and 88.5 per cent (n = 108) practiced dentistry for 20 years or less while 11.5 per cent (n = 14) were in the field for more than 20 years. A large proportion of dentists 41.8 per cent (n= 51) worked in public hospitals, similarly; 41.0 per cent (n= 50) worked in Universities, 32.8 per cent (n= 40) worked in the private sector and 10.7 per cent (n= 13) worked in other areas. Dental professionals' specialties, last degrees obtained and country of qualification are described in Table 2.3. The mean number of hours these dental practitioners practice dentistry per week was 31.34, SD = 15.05. Majority of dental practitioners in this sample see fewer than 10 children per day 45.1 per cent (n = 55); descriptive statistics for the number of children seen in practice by the KSA sample are described in Table 2.4.

Table 2.3: Descriptive statistics for specialty, last degree obtained and country of qualification of dentists working in KSA

Specialty	KSA Sample (N=122) N (%)
1) General Dentistry	49 (40.2)
2) Advanced General Dentistry	2 (1.6)
3) Restorative Dentistry	11 (9.0)
4) Paediatric Dentistry	16 (13.1)
5) Orthodontics	8 (6.6)
6) Periodontics	7 (5.7)
7) Maxillofacial Surgery	3 (2.5)
8) Prosthodontics	9 (7.4)
9) Endodontics	14 (11.5)
10) Oral Medicine	0
11) Dental Public Health	3 (2.5)
What is the last degree you have obtained?	
Bachelors level	57 (46.7)
Masters level	36 (29.5)
PhD	11 (9.0)
Fellowship	1 (0.8)
Board	16 (13.1)
Other	1 (0.8)
Country of qualification	
Saudi Arabia	77(63.1)
UK	8 (6.6)
Other	37 (30.3)

Table 2.4: Descriptive statistics for number of children seen in practice/week in the KSA sample

Number of children seen/week	KSA Sample (N=122) N (%)
None	28 (23.0)
Less than 10 children	55 (45.1)
10 - 20 children	21 (17.2)
21- 40 children	16 (13.1)
> 40 children	2 (1.6)

2.5.3 Part two: Knowledge regarding the recognition of forms of CAN, risk factors, manifestations of physical abuse, and indicators of CAN

2.5.3.1 Knowledge of forms of child abuse and neglect

A 5 point Likert scale was adopted to explore dental practitioners' knowledge of CAN, which was later recoded to a three point scale (agree, neutral, disagree). Dental practitioners from both groups were asked about their ability to identify different forms of child abuse and neglect (Table 2.5). Responses from UK and Saudi Arabian dental practitioners were compared via Pearson Chi Square test.

Comparing the knowledge of child abuse showed that there was a significant difference between the two groups associated with the following questions; "failure to seek needed medical treatment" $Chi^2 = 24.878$, $p < 0.05$, "neglect of child education $Chi^2 = 10.136$, $p<0.05$, "beating with a hand or object causing injury" $Chi^2 = 21.945$, $p < 0.05$, "non-injurious spanking", $Chi^2 = 43.783$, $p < 0.05$, "sexual abuse", $Chi^2 = 23.613$, $p < 0.05$ and "lack of interest in child's problems" $Chi^2 = 12.647$, $p < 0.05$. The significant values are shown in bold (Table 2.5). In general, the trend was that the UK group gave more certain answers where the KSA group was more likely to give an uncertain response "neutral" or to disagree.

Table 2.5: Descriptive statistics for knowledge of forms of child abuse in the UK and KSA Samples

Item	Answer	UK Sample (N=168) N (%)	KSA Sample (N=122) N (%)	CHI² (p-value)
1) Failure to seek needed medical treatment	D[a]	1(0.6)	8(6.6)	24.878 (p< 0.001)
	N[b]	2(1.2)	15(12.3)	
	A[c]	163(97.0)	99(81.1)	
2) Neglect of child education	D	0	7(5.7)	10.136 (0.006)
	N	10(6.0)	5(4.1)	
	A	156(92.9)	110(90.2)	
3) Beating with a hand or object causing injury	D	1(0.6)	10(8.2)	21.945 (p< 0.001)
	N	2(1.2)	11(9.0)	
	A	163(97.0)	101(82.8)	
4) Non-injurious spanking	D	75(44.7)	20(16.4)	43.783 (p< 0.001)
	N	61(36.3)	38(31.1)	
	A	30(17.9)	64(52.5)	
5) Calling names and verbal humiliation	D	1(0.6)	5(4.1)	4.716 (0.095)
	N	8(4.8)	8(6.6)	
	A	157(93.5)	109(89.3)	
6) Sexual abuse	D	2(1.2)	10(8.2)	23.613 (p< 0.001)
	N	0	10(8.2)	
	A	164(97.6)	102(83.6)	
7) Lack of interest in a child's problems	D	2(1.2)	10(8.2)	12.647 (0.002)
	N	12(7.1)	17(13.9)	
	A	150(89.3)	95(77.9)	

[a] Disagree, [b] Neutral, [c] Agree

2.5.3.2 Knowledge of risk factors of CAN

An assessment of knowledge in regards to factors that may increase the risk of CAN of dental practitioners working in the UK and Saudi Arabia is summarised in Table 2.6.

Comparing knowledge regarding the risk factors between the UK and Saudi groups showed significant differences between "child under two years old", $Chi^2 = 10.421$, $p < 0.05$, "caregiver substance abuse (alcohol/drug) ", $Chi^2 = 26.734$, $p < 0.05$, "family with step parent", $Chi^2 = 26.278$, $p < 0.05$, "family with single mother", $Chi^2 = 16.076$, $p < 0.05$, "family with single father" $Chi^2 = 23.491$, $p < 0.05$, "loss of job", $Chi^2 = 26.630$, $p < 0.05$, "low socio-economic status", $Chi^2 = 24.416$, $p < 0.05$, and "medium to high socio-economic status", $Chi^2 = 11.550$, $p < 0.05$. Significant values are shown in bold (Table 2.6). In general, the Saudi group had better knowledge of risk factors of CAN than the UK group.

Table 2.6 Descriptive statistics for knowledge of risk factors of child abuse and neglect in the UK and KSA Samples

Item	Answer	UK Sample (N=168) N (%)	KSA Sample (N=122) N (%)	CHI² (p value)
1) Child under two years old	D[a]	19(11.3)	32(26.2)	10.421 (0.005)
	N[b]	54(32.1)	31(25.4)	
	A[c]	91(54.2)	59(48.4)	
2) Child with disability	D	9(5.4)	14(11.5)	5.342 (0.069)
	N	32(19)	15(12.3)	
	A	124(73.8)	93(76.2)	
3) Child with medical condition	D	18(10.7)	21(17.2)	4.642 (0.098)
	N	48(28.6)	24(19.7)	
	A	99(58.9)	77(63.1)	
4) Caregiver substance abuse (alcohol/drugs)	D	1(0.6)	6(4.9)	26.734 (p< 0.001)
	N	3(1.8)	20(16.4)	
	A	161(95.8)	96(78.7)	
5) Young parental age (<19 years)	D	12(7.1)	18(14.8)	5.083 (0.079)
	N	45(26.8)	25(20.5)	
	A	108(64.3)	79(64.8)	
6) Overcrowded household	D	13(7.7)	12(9.8)	1.888 (0.389)
	N	51(30.4)	29(23.8)	
	A	101(60.0)	81(66.4)	
7) Family with step parent	D	21(12.5)	9(7.4)	26.278 (p< 0.001)
	N	69(41.1)	21(17.2)	
	A	75(44.6)	92(75.4)	
8) Family with single mother	D	37(22.0)	26(21.3)	16.076 (p< 0.001)
	N	90(53.6)	42(34.4)	
	A	38(22.6)	54(44.3)	
9) Family with single father	D	32(19.0)	19(15.6)	23.491 (p< 0.001)
	N	91(54.2)	39(32.0)	
	A	41(24.4)	64(52.5)	
10) Polygamous families	D	17(10.1)	13(10.7)	2.201 (0.333)
	N	82(48.8)	51(41.8)	
	A	64(38.1)	58(47.5)	
11) Loss of job	D	21(12.5)	6(4.9)	26.630 (p< 0.001)
	N	74(44.0)	27(22.1)	
	A	70(41.7)	89(73.0)	
12) Low socio-economic status	D	29(17.3)	10(8.2)	24.416 (p< 0.001)
	N	61(36.3)	21(17.2)	
	A	75(44.6)	91(74.6)	
13) Medium to high socio-economic status	D	53(31.5)	34(27.9)	11.550 (0.003)
	N	95(56.5)	57(46.7)	
	A	17(10.1)	31(25.4)	

[a] Disagree, [b] Neutral, [c] Agree

2.5.3.3 Knowledge in common manifestations of physical abuse

Dental practitioners in both the UK and Saudi Arabian groups had varied responses in regards to common manifestations of physical abuse (Table 2.7). Comparing the participants' responses regarding the manifestations of physical abuse showed that there are significant differences between the two groups in regards to "injuries to palms of hands" $Chi^2 = 25.679$, $p < 0.05$, "bone fractures" $Chi^2 = 7.778$, $p < 0.05$, "skin and mucosal burns" $Chi^2 = 8.581$, $p < 0.05$ (Table 2.7). The Saudi group had higher responses related to "injuries to palms of hands" compared to the UK group, but there was a small but significant group from the Saudi group who disagreed with "bone fractures" and "skin and mucosal burns".

Table 2.7: Descriptive statistics for most common manifestations of physical abuse in the UK and KSA Samples

Item	Answer	UK Sample (N=168) N (%)	KSA Sample (N=122) N (%)	CHI² (p-value)
1) Bruises on the neck	D[a]	9(5.4)	13(10.7)	2.699 (0.259)
	N[b]	37(22.0)	24(19.7)	
	A[c]	116(69.0)	85(69.7)	
2) Injuries to soles of feet	D	21(12.5)	12(9.8)	4.413 (0.110)
	N	59(35.1)	33(27.0)	
	A	82(48.8)	77(63.1)	
3) Injuries to palms of hands	D	19(11.3)	8(6.6)	25.679 (P< 0.001)
	N	62(36.9)	18(14.8)	
	A	79(47.0)	96(78.7)	
4) Oro-facial injuries	D	5(3.0)	6(4.9)	0.906 (0.636)
	N	21(12.5)	13(10.7)	
	A	139(82.7)	103(84.4)	
5) Bone fractures	D	6(3.6)	13(10.7)	7.778 (0.020)
	N	34(20.2)	32(26.2)	
	A	125(74.4)	77(63.1)	
6) Skin and mucosal burns	D	0	6(4.9)	8.581 (0.014)
	N	19(11.3)	11(9.0)	
	A	146(86.9)	105(86.1)	

[a] Disagree, [b] Neutral, [c] Agree

2.5.3.4 Knowledge of observed indicators of child abuse

Almost half the UK sample (47.3 per cent) correctly disagreed with the item “a bruise on a toddler’s forehead” being a direct indicator to child abuse, there was a significant difference between the two groups, $Chi^2 = 77.746$, $p < 0.05$. More dentists in the UK group also correctly disagreed with head lice being an indicator of child abuse. There was also a significant difference, $Chi^2 = 36.126$, $p < 0.05$ (Table 2.8).

Looking through the two groups’ responses regarding indicators of child abuse and neglect, there was a significant difference associated with “bruises on soft tissue of the cheek and neck”, $Chi^2 = 14.305$, $p < 0.05$, “intra oral injuries”, $Chi^2 = 20.199$, $p<0.05$, “child’s poor general health”, $Chi^2 = 17.970$, $p < 0.05$. Dentists in the UK group in overall scored higher than the Saudi group. Descriptive statistics show the difference between the two groups’ responses (Table 2.8)

Table 2.8: Descriptive statistics for observed indicators of child abuse in the UK and KSA Samples

Item	Answer	UK Sample (N=168) N (%)	KSA Sample (N=122) N (%)	CHI² (p-value)
1) Bruises on soft tissue of the cheek and neck	D[a]	2(1.2)	5(4.1)	14.305 (0.001)
	N[b]	6(3.6)	18(14.8)	
	A[c]	157(93.5)	99(81.1)	
2) Intra oral injuries	D	8(4.8)	25(20.5)	20.199 (p< 0.001)
	N	36(21.4)	33(27.0)	
	A	120(71.4)	64(52.5)	
3) Bruises on a toddler's forehead	D	79(47.0)	11(9.0)	77.746 (p< 0.001)
	N	55(32.7)	29(23.8)	
	A	31(18.5)	82(67.2)	
4) Overt sexually suggestive behaviour	D	2(1.2)	7(5.7)	4.773 (0.092)
	N	26(15.5)	20(16.4)	
	A	136(81.0)	95(77.9)	
5) Signs of delayed social and intellectual development	D	12(7.1)	5(4.1)	2.163 (0.339)
	N	50(29.8)	32(26.2)	
	A	103(61.3)	85(69.7)	
6) Child's poor general hygiene	D	10(6.0)	6(4.9)	0.193 (0.908)
	N	25(14.9)	18(14.8)	
	A	130(77.4)	98(80.3)	
7) Child's poor general health	D	20(11.9)	6(4.9)	17.970 (p< 0.001)
	N	58(34.5)	22(18.0)	
	A	87(51.8)	94(77.0)	
8) Rampant caries	D	12(7.1)	17(13.9)	5.060 (0.080)
	N	37(22)	33(27.0)	
	A	116(69.0)	72(59.0)	
9) Head lice	D	75(44.6)	17(13.9)	36.126 (p< 0.001)
	N	49(29.2)	42(34.4)	
	A	41(24.4)	63(51.6)	

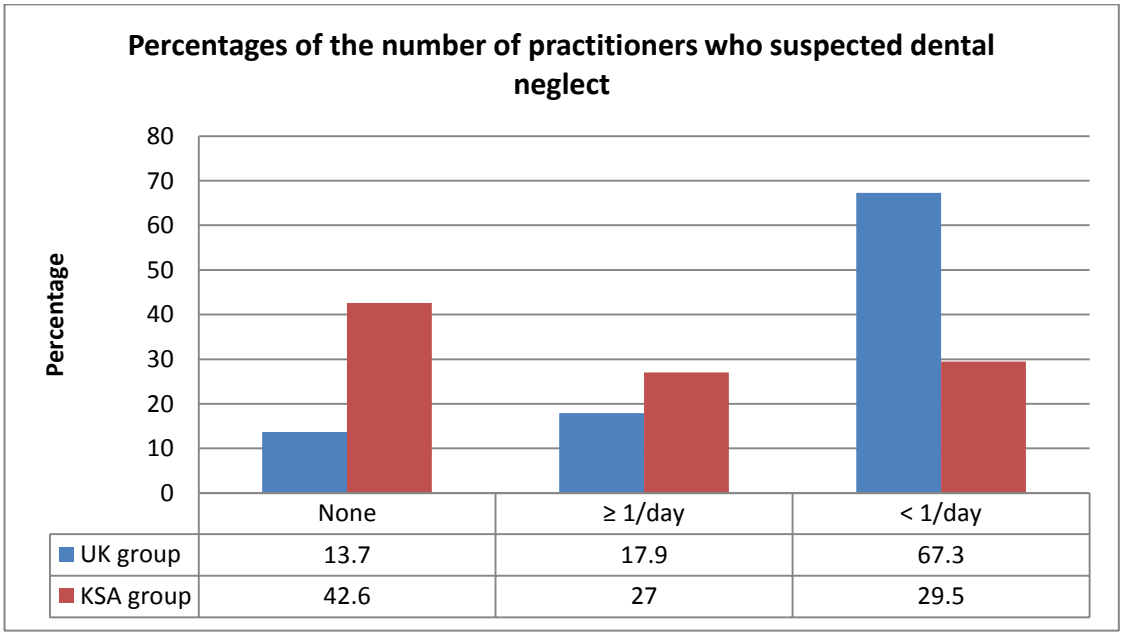
[a] Disagree, [b] Neutral, [c] Agree

2.5.4 Part three: Experience with CAN

2.5.4.1 Number of children seen with neglected dentition

In regard to the number of children seen in the dental practice with neglected dentition; 13.7 per cent of dental practitioners working in the UK and 42.6 per cent of dental practitioners in KSA either do not treat children or haven't seen any children with neglected dentition in the dental surgery. Although the UK group reports seeing more cases of dental neglect throughout the year (67.3 per cent) compared to the Saudi group (29.5 per cent), however, the KSA group sees a larger percentage of dental neglect cases per day (27 per cent) as compared to the UK group (17.9 per cent). A significant difference was observed between the two groups $Chi^2 = 45.204$, at $p < 0.0001$ (Figure 2.1).

Figure 2.1: Descriptive statistics for the number of practitioners suspecting neglected dentition in the UK and KSA samples.



2.5.4.2 Number of suspected cases of CAN

When dental practitioners were asked if they ever suspected any of the child patients in their practices were subjected to child abuse in the last 5 years; more than one quarter of participants in the UK group 28.0 per cent (n = 47), and more than half of the Saudi group 59.0 per cent (n = 72) answered yes to suspecting such cases in the last five years. The percentage of dentists from the Saudi group who experienced such cases was around double those of the UK group. When dentists were asked if they had suspected cases of child physical abuse in the last five years; there was a significant difference between the two groups at $p< 0.05$. Similarly, there was a significant difference between the answers of the two groups in regards to emotional abuse at $p< 0.05$. A significant difference between the two groups was also observed in their responses to sexual abuse at $p< 0.05$, as well as for child neglect at $p< 0.001$. Dentists in the Saudi group suspected a higher number of cases of all types of CAN compared to the UK group (Table 2.9).

Almost all participants from both UK and Saudi groups responded zero to the question “Have you seen any children in the last 5 years that you were informed were subject to CAN?” This question was not reported in this study.

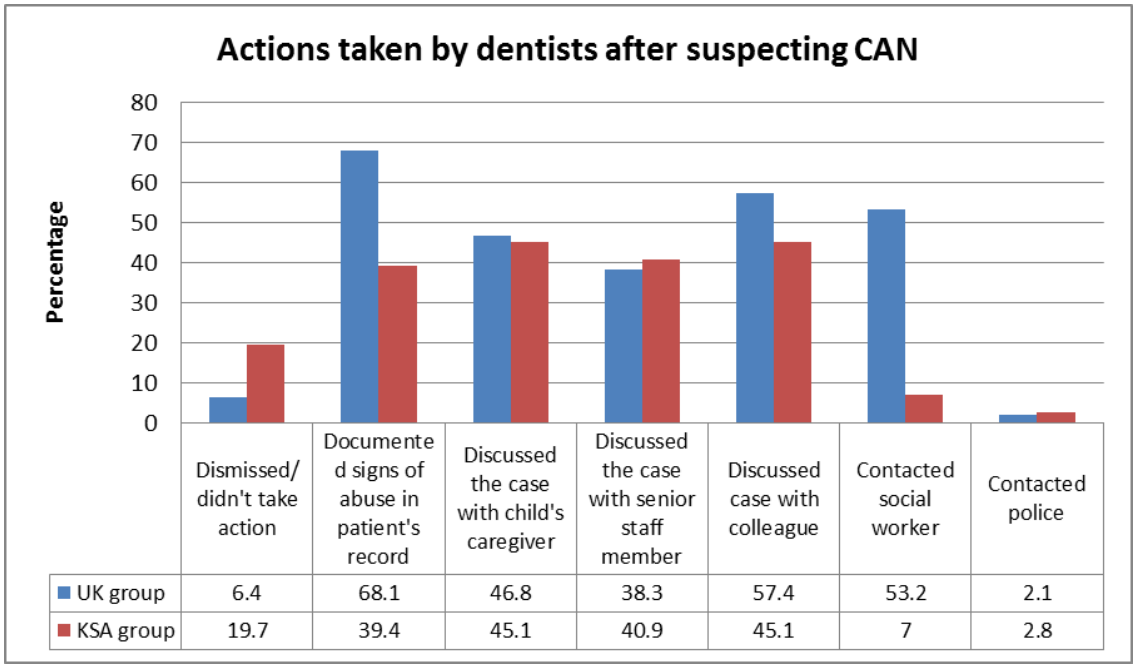
Table 2.9: Descriptive statistics for number of suspected cases of abuse seen by dentists in the last 5 years in the UK sample and KSA sample

Type of Abuse	Answer	UK Sample (N=168) N (%)	KSA Sample (N=122) N (%)	CHI² (p-value)
1) Physical abuse	Up to 5	25(14.9)	47(38.5)	6.853 (0.009)
	>5	0	14(8.3)	
2) Emotional abuse	Up to 5	22(13.1)	39(32)	7.347 (0.007)
	>5	2(1.2)	24(19.7)	
3) Sexual abuse	Up to 5	10(6.0)	30(24.6)	10 (0.002)
	>5	0	0	
4) Neglect	Up to 5	28(16.7)	19(15.6)	13.584 (p< 0.001)
	>5	14(8.3)	44(36.1)	

2.5.4.3 Actions taken by dentists upon suspecting cases of CAN

Out of the 47 UK and 71 Saudi dentists who experienced suspected cases of CAN, the percentage of Saudi dentists (19.7 per cent) who dismissed the case and did not take any action was around three times that of UK dentists (6.4 per cent). Only 39.4 per cent of dentists working in KSA and 68.1 per cent of dentists in the UK documented signs of abuse in the patient's medical record. More than half of the UK group (53.2 per cent) and only 7 per cent of dentists in the KSA group contacted social services. Contacting the police was least popular among both groups; where only 2.1 per cent of the UK group and 2.8 per cent of the KSA group did (Figure 2.2).

Figure 2.2: Descriptive statistics for actions taken by dentists in the UK and KSA samples after suspecting child abuse and neglect

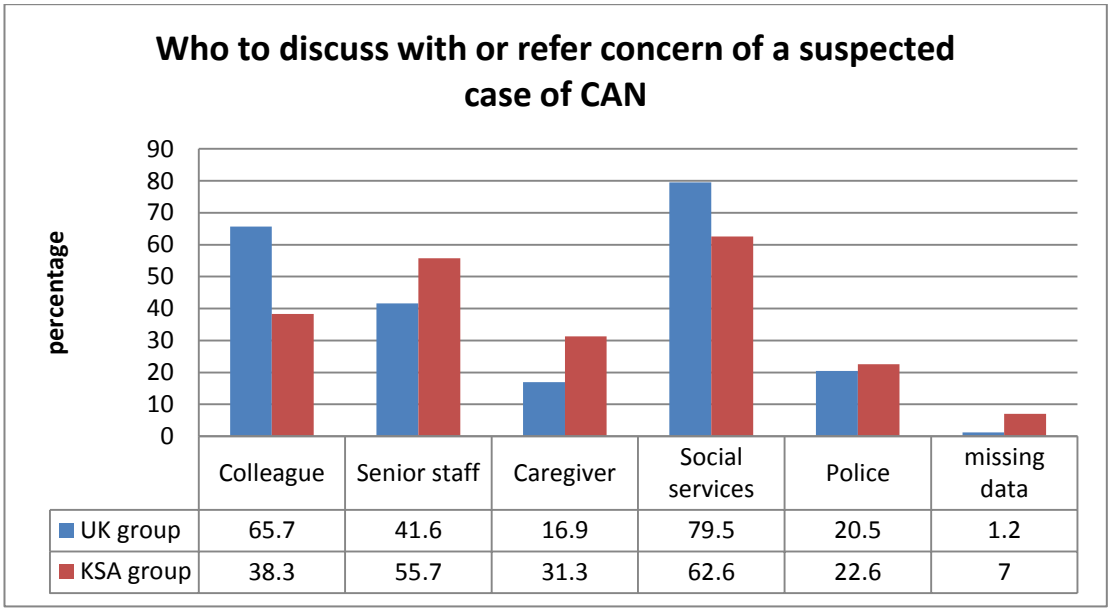


	Dismissed/ didn't take action	Documented signs of abuse in patient's record	Discussed the case with child's caregiver	Discussed the case with senior staff member	Discussed case with colleague	Contacted social worker	Contacted police
UK group	6.4	68.1	46.8	38.3	57.4	53.2	2.1
KSA group	19.7	39.4	45.1	40.9	45.1	7	2.8

In response to whether the place where dentists work have a protocol of dealing with child abuse and neglect; the majority of dental practitioners from the UK group (89.9 per cent) reported that a child protection protocol existed in their practices. A lower percentage of dentists from the Saudi group (19.7 per cent) identified the presence of a protocol. When asked if dental practitioners were willing to report a suspected case of CAN; most dentists in the UK group (95.2 per cent) and KSA dentists (84.3 per cent) replied yes.

In regards to the question “who do you prefer to discuss or refer concern in cases of suspicion of child abuse or neglect?” The item with the highest percentage of agreements was “social services”. In the UK group, 79.5 per cent of dentists and 62.6 per cent of dentists in the KSA group preferred discussing suspected CAN case with a social worker. Detailed data is described in Figure 2.3.

Figure 2.3: Descriptive statistics for whom to discuss with or refer concern in case of suspicion of child abuse and neglect in the UK and KSA samples



	Colleague	Senior staff	Caregiver	Social services	Police	missing data
UK group	65.7	41.6	16.9	79.5	20.5	1.2
KSA group	38.3	55.7	31.3	62.6	22.6	7

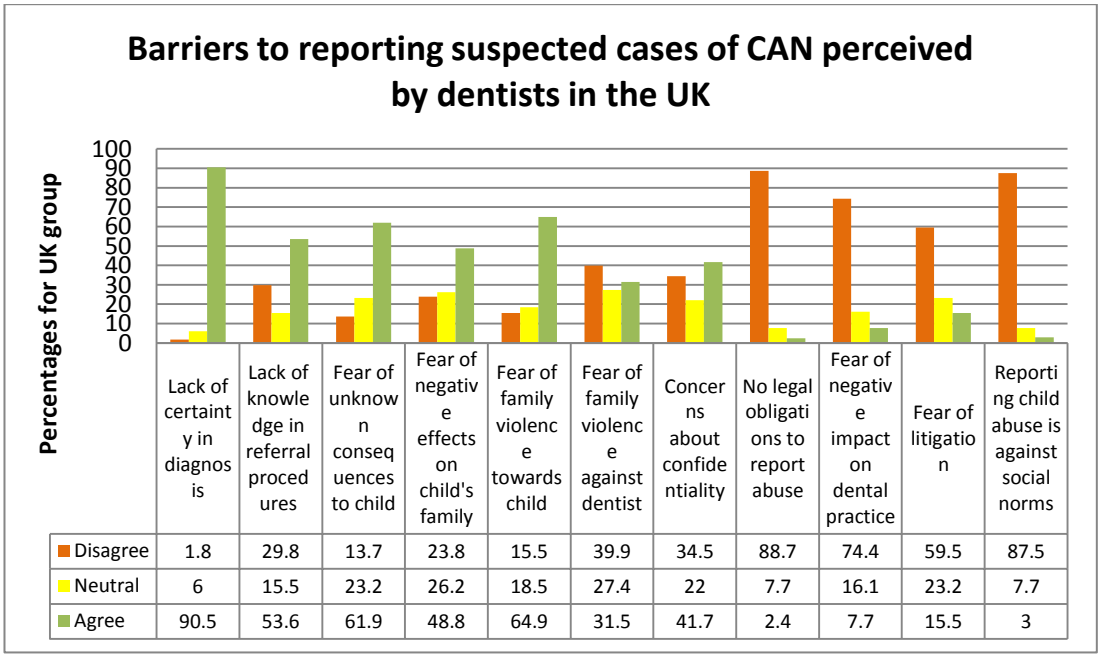
The comparison of experiences with child abuse and neglect between the two groups revealed that there is a significant difference between participants' responses to "does the place where you work have a protocol of dealing with child abuse and neglect?" 89.9 per cent (n=151) of the UK group replied yes, while only 19.7 per cent (n= 24) dental practitioners in the KSA group did, Chi^2 = 144.308, $p<0.0001$, A significant difference was also observed between the two groups in their responses to; "would you be willing to report a suspected case of child abuse?" 94 per cent (n= 158) from the UK sample and 79.5 per cent (n= 97) from the KSA sample replied yes, $Chi^2 = 9.792$, $p<0.05$.

2.5.5 Part four: Barriers that prevent practitioners from reporting suspected cases of CAN

2.5.5.1 Barriers for the UK group

Lack of certainty about diagnosis of CAN was perceived as the most common barrier to reporting suspected cases of CAN by 90.5 per cent (n = 152) of dental practitioners working in the UK, the second most common barrier (64.9 per cent) was fear of family violence towards the child, followed by fear of unknown consequences to the child (61.9 per cent). Figure 2.4 describes perceived barriers that prevent dental practitioners in the UK from reporting suspected cases of CAN.

Figure 2.4: Barriers to reporting suspected cases of CAN perceived by dentists in the UK

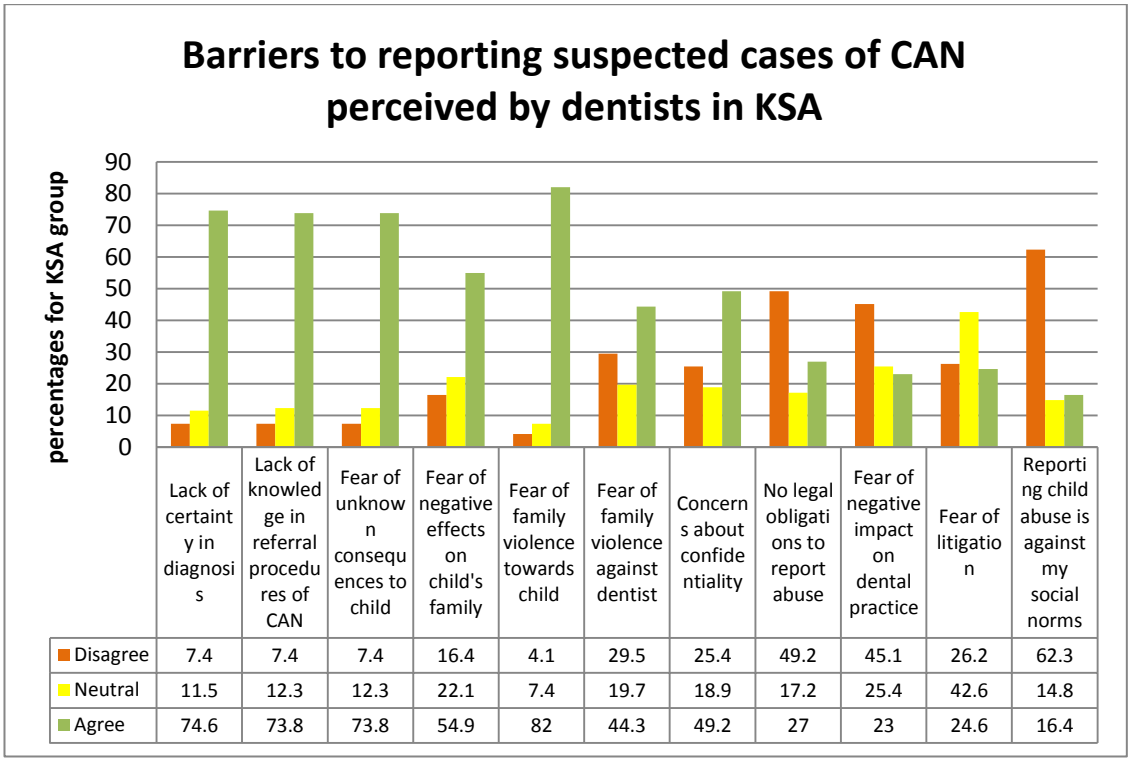


	Lack of certainty in diagnosis	Lack of knowledge in referral procedures	Fear of unknown consequences to child	Fear of negative effects on child's family	Fear of family violence towards child	Fear of family violence against dentist	Concerns about confidentiality	No legal obligations to report abuse	Fear of negative impact on dental practice	Fear of litigation	Reporting child abuse is against social norms
Disagree	1.8	29.8	13.7	23.8	15.5	39.9	34.5	88.7	74.4	59.5	87.5
Neutral	6	15.5	23.2	26.2	18.5	27.4	22	7.7	16.1	23.2	7.7
Agree	90.5	53.6	61.9	48.8	64.9	31.5	41.7	2.4	7.7	15.5	3

2.5.5.2 Barriers for the Saudi Arabian group

Fear of family violence towards the child was perceived as the most common barrier (82 per cent) that prevents dental practitioners working in KSA from reporting suspected cases of CAN. Lack of certainty about the diagnosis of child abuse and neglect was considered the second most common barrier reported by this group (74.6 per cent), and two items; lack of knowledge in referral procedures of CAN as well as fear of unknown consequences to the child were reported the third most common barriers to reporting CAN (73.8 per cent) as described in Figure2. 5.

Figure 2.5: Barriers to reporting suspected cases of CAN perceived by dentists in KSA



	Lack of certainty in diagnosis	Lack of knowledge in referral procedures of CAN	Fear of unknown consequences to child	Fear of negative effects on child's family	Fear of family violence towards child	Fear of family violence against dentist	Concerns about confidentiality	No legal obligations to report abuse	Fear of negative impact on dental practice	Fear of litigation	Reporting child abuse is against my social norms
Disagree	7.4	7.4	7.4	16.4	4.1	29.5	25.4	49.2	45.1	26.2	62.3
Neutral	11.5	12.3	12.3	22.1	7.4	19.7	18.9	17.2	25.4	42.6	14.8
Agree	74.6	73.8	73.8	54.9	82	44.3	49.2	27	23	24.6	16.4

Comparison between dental practitioners working in the UK and Saudi Arabia regarding their identified barriers revealed a significant difference between participants' responses in 9 out of the 11 items; "lack of certainty about diagnosis", $Chi^2 = 9.991$, $p<0.05$, " lack of knowledge in referral procedures of child abuse and neglect", $Chi^2 = 22.564$, $p<0.001$, "fear of unknown consequences to the child", $Chi^2 = 8.436$, $p<0.05$, "fear of family violence towards the child", $Chi^2 = 17.666$, $p<0.001$, "fear of family violence against the dentists", $Chi^2 = 6.832$, $p<0.05$, "dentists have no legal obligation to report abuse", $Chi^2 = 54.743$, $p<0.001$, "fear of negative impact on dental practice", $Chi^2 = 24.481$, $p<0.001$, "fear of litigation", $Chi^2 = 28.813$, $p<0.001$, "reporting child abuse is against my social norms", $Chi^2 = 23.887$, $p<0.001$.

2.5.6 Part five: Present knowledge and attitudes towards training programs

Around two thirds of the UK group 69.6 per cent (n = 117) and 3.28 per cent (n = 4) of the Saudi group have attended a training program in child protection. More than half those dentists of the UK group (58.2 per cent) attended training workshops in child protection since their graduation. Table 2.10 describes the type of training programs dentists attended.

Table 2.10: Descriptive statistics for type of training programs in child protection attended in the UK and KSA samples

Item	UK Sample (N=117) N (%)	KSA Sample (N=4) N (%)
1) Child abuse/child protection included in undergraduate or initial training	31(26.5)	1(25.0)
2) Child abuse/child protection as part of postgraduate training	41(35)	1(25.0)
3) Training workshops in child abuse /child protection since my graduation	68(58.2)	1(25.0)
4) Computer-based training	42(35.9)	1(25.0)

Participants could give more than one response, so totals may be greater than 100 %

Responses to the question about attitudes of dentists towards training programs in child protection revealed that the majority of both groups; (96.4 per cent) of the UK group and (87.7 per cent) of the KSA group agreed that dentist's knowledge about child protection protocols is important. In the UK group, 78.6 per cent of dental practitioners and 86.1 per cent of the KSA group agreed that more training is required for dentists in this field. Also, 38.7 per cent of dentists working in the UK and 44.3 per cent of the KSA group can confidently recognize signs of abuse in a child. Their attitudes are described in more detail in Table 2.11.

Table 2.11: Descriptive statistics for knowledge and attitudes toward training programs in child protection in the UK and KSA Samples

Item	Answer	UK Sample (N=168) N (%)	KSA Sample (N=122) N (%)	CHI² (p-value)
1)Dentists' knowledge about child protection protocols is important	D[a]	3(1.8)	1(0.8)	5.025 (0.081)
	N[b]	1(0.6)	5(4.1)	
	A[c]	162(96.4)	107(87.7)	
2) More training is required for dentists in this field	D	9(5.4)	1(0.8)	9.890 (0.007)
	N	25(14.9)	7(5.7)	
	A	132(78.6)	105(86.1)	
3) I can confidently recognize signs of abuse in a child	D	40(23.8)	25(20.5)	2.162 (0.339)
	N	61(36.3)	34(27.9)	
	A	65(38.7)	54(44.3)	

[a] Disagree, [b] Neutral, [c] Agree

Comparison between dental practitioners working in the UK and Saudi Arabia in regards to their present knowledge and attitudes towards training programs in child protection revealed a significant difference between participants' responses in the question that examined if they have ever been on a child protection training program, $Chi^2 = 123.535$, $p<0.001$, a significant difference between the two groups was also observed in the following; "more training is required for dentists in this field", $Chi^2 = 9.890$, $p<0.05$ (Table 2.11).

2.5.7 Predictors used for regression analysis

Regression analysis was conducted to identify potential predictors for knowledge, experience and training related to child abuse and neglect. Variables used as predictors were coded for regression analysis as the following:

- Age groups; Age group ≤ 40 years was coded 0 and age group > 40 years was coded 1;
- Gender; Male gender was coded 0 and female gender was coded 1;
- Specialty of dental practitioner; non-specialist was coded 0 and specialist was coded 1;
- Practice duration; dental practitioners working for up to 10 years were coded 0 and dentists working more than 10 years were coded 1;
- Last degree obtained; dental practitioners with BDS degrees were coded 0 and dental practitioners with post graduate qualifications were coded 1;
- Number of children seen in the practice per week; children ≤ 10 in number were coded 0 and children > than 10 in number were coded 1;

- Previous training in child protection; no previous training was coded 0 and history of previous training was coded 1.

A formal sample size calculation for the regression analyses was not performed. However, Tabachnick & Fidell (2001) recommend 12 cases per predictor variable as a minimum requirement. With 7 predictors, the sample size of 290 was more than sufficient.

2.5.8 Predictors of knowledge in regards to recognition of CAN

History of previous training in child protection was found to be the only predictor of knowledge in forms of CAN. Results also showed that female dentists are at borderline of having more knowledge in forms of child abuse and neglect (Table 2.12).

Table 2.12: Predictors of knowledge for forms of child abuse and neglect

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	18.446	.254		72.600	< 0.001
Age	-.147-	.311	-.039-	-.472-	0.637
Gender	.417	.221	.109	1.886	0.060
Specialty	-.454-	.279	-.117-	-1.629-	0.105
Practice Duration	.389	.335	.099	1.163	0.246
Last Degree	.328	.282	.086	1.167	0.244
Children seen/week	.174	.237	.045	.736	0.462
Previous Training	1.096	.242	.285	4.533	**< 0.001**

a. Dependent Variable: knowledge of forms of child abuse and neglect

In terms of identifying **risk factors;** the only predictor found was gender, where female dentists were more knowledgeable (Table 2.13).

Table 2.13: Predictors for knowledge for risk factors of child abuse and neglect

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	29.889	.726		41.167	< 0.001
Age	-.892-	.892	-.086-	-1.000-	0.318
Gender	1.472	.632	.141	2.328	**0.021**
Specialty	.932	.796	.088	1.171	0.243
Practice Duration	1.442	.958	.135	1.505	0.133
Last Degree	.056	.802	.005	.069	0.945
Children seen/week	-.455-	.677	-.043-	-.672-	0.502
Previous Training	-.051-	.692	-.005-	-.073-	0.942

a. Dependent Variable: knowledge of risk factors of child abuse and neglect

In terms of identifying **common manifestations of physical abuse**, there was no predictor for knowledge except for specialty; dentists who are specialized tend to have more knowledge in common manifestations of physical abuse. Last degree obtained was on the borderline of being significant at p= 0.061, where dental practitioners with a BDS degree had better knowledge than dental practitioners with higher degrees. Gender was not significant, but female dental practitioners seemed to have better knowledge (Table 2.14).

Table 2.14: Predictors for knowledge in common manifestations of physical abuse

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	15.399	.341		45.208	< 0.001
Age	.562	.418	.115	1.343	0.180
Gender	.529	.297	.108	1.782	0.076
Specialty	.828	.374	.166	2.215	**0.028**
Practice Duration	.168	.450	.033	.373	0.709
Last Degree	-.709-	.376	-.144-	-1.884-	0.061
Children seen/week	-.370-	.318	-.075-	-1.166-	0.245
Previous Training	-.114-	.325	-.023-	-.350-	0.727

a. Dependent Variable: knowledge in common manifestations of physical abuse

There was only one identifiable **predictor for knowledge in indicators of child abuse and neglect,** which is previous child protection training; dental practitioners with previous training had better knowledge (Table 2.15).

Table 2.15: Predictors for knowledge of indicators of child abuse and neglect

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	21.934	.366		59.883	< 0.001
Age	-.046-	.449	-.009-	-.101-	0.919
Gender	.292	.319	.056	.914	0.362
Specialty	-.200-	.403	-.038-	-.495-	0.621
Practice Duration	.292	.483	.054	.604	0.546
Last Degree	.250	.407	.048	.615	0.539
Children seen/week	-.128-	.341	-.024-	-.376-	0.707
Previous Training	.856	.349	.162	2.454	**0.015**

a. Dependent Variable: knowledge of indicators of child abuse and neglect

2.5.9 Predictors of experience in regard to CAN

In terms of identifying predictors for the number of children seen with neglected dentition; non-specialists had identified more children with neglected dentition than specialized dentists. Males identified more cases of neglected dentition than female dentists did at borderline p= 0.056. No significance was observed yet older age groups (41 years and above) seemed to have identified more cases than the younger age group (Table 2.16).

Table 2.16: Predictors for the number of children seen with neglected dentition

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.470	.272		16.443	< 0.001
Age	.594	.336	.145	1.767	0.078
Gender	-.455-	.237	-.110-	-1.922-	0.056
Specialty	-.792-	.297	-.189-	-2.665-	**0.008**
Practice Duration	.039	.360	.009	.109	0.914
Last Degree	-.301-	.298	-.073-	-1.011-	0.313
Children seen/week	.318	.252	.077	1.260	0.209
Previous Training	.314	.259	.076	1.211	0.227

a. Dependent Variable: How often do you see children with neglected dentitions?

None of the predictors of suspecting a case of CAN in the last 5 years were significant. However age group approached significance (p= 0.058, Table 2.17).

Table 2.17: Predictors for suspected cases of CAN in the last 5 years of practice

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.325	.067		4.835	< 0.001
Age	-.158-	.083	-.161-	-1.902-	0.058
Gender	.041	.058	.042	.703	0.483
Specialty	.122	.073	.121	1.659	0.098
Practice Duration	-.026-	.089	-.026-	-.292-	0.770
Last Degree	.126	.074	.128	1.714	0.088
Children seen/week	.075	.062	.075	1.196	0.233
Previous Training	.017	.064	.017	.258	0.797

a. Dependent Variable: Have you seen a child that you suspected was subject to child abuse in the last 5 years?

2.5.10 Predictors of perceived barriers that prevent reporting suspected CAN

The predictors of **perceived barriers that prevent dental practitioners from reporting suspected CAN** were investigated. A history of previous child protection training was the strongest predictor; where dental practitioners with no previous training were more likely to perceive barriers preventing reporting suspected abuse, followed by female dental practitioners. Dentists who had seen fewer children had more perceived barriers although there was no significant difference at p= 0.064. The younger age group seemed to have more perceived barriers as well but again its difference was not significant at p= 0.075 (Table 2.18).

Table 2.18: Predictors for perceived barriers that prevent dental practitioners from reporting suspected CAN

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	24.479	.627		39.016	< 0.001
Age	-1.383-	.773	-.145-	-1.790-	0.075
Gender	1.294	.547	.135	2.367	**0.019**
Spec	-.212-	.687	-.022-	-.309-	0.758
Practice Duration	-.708-	.830	-.072-	-.853-	0.395
Last Degree	.594	.690	.062	.861	0.390
Children seen/week	-1.083-	.584	-.112-	-1.856-	0.064
Previous Training	-1.653-	.598	-.171-	-2.762-	**0.006**

a. Dependent Variable: Barriers to reporting suspected cases of CAN

2.6 DISCUSSION

The present research is a cross sectional study that aimed at exploring knowledge, experience and attitudes of dental practitioners working in Saudi Arabia towards child abuse and neglect via a survey. Dental practitioners working in the UK were administered the same survey and their replies were compared to the Saudi group. This study aimed at exploring knowledge in regard to recognition of child abuse and neglect, professional experience in relation to CAN. Moreover, it assessed attitudes towards the topic and towards reporting suspected cases of CAN and the barriers that prevent dentists from reporting child maltreatment. Finally, the study explored if dental practitioners had previous training in safeguarding children and the need for further training. At the time of the research, no published studies of this subject on dental practitioners working in Saudi Arabia were available.

In this study, a low response rate (UK 31.5 per cent; Saudi Arabia 1.7 per cent) was observed in both groups although reminder and thank you letters/e-mails were sent. Only 189 UK dentists responded to the self-administered questionnaires out of the 600 dentists approached, giving a total response rate of only 31.5 per cent which is low, although a similar response rate was reported by (Bsoul et al., 2003). A lower response rate was observed among the KSA group; although an invitation e-mail was sent to all dental professionals who are members with the Saudi Dental Society. If the number of members of the Saudi dental society in 2012 was 7,352 dentists, the response rate would be as little as 1.7 per cent. The low response rate in both groups could reflect the lack of interest dental professionals have in the subject of safeguarding children

in the dental practice or the sensitive nature of the subject. Additionally, a lower response rate among the Saudi group could be explained by the invitation method. Invitation e-mails were sent via the Saudi Dental Society (SDS) to all its members. The SDS sends e-mails regularly to its members with dental updates, upcoming events and conferences as well as surveys and research invitations. There are some disadvantages to this method of invitation even though many dental practitioners are registered with the SDS such as:

a) Changing an e-mail address without informing the SDS

b) Registering in the SDS with an e-mail address that is not frequently used owing to having several e-mails.

c) SDS e-mails might not find their way to the inbox, and are rather retrieved from the spam/junk mail.

d) Frequent e-mails from the SDS to its members could make them seem less important and thus the individual disregards them.

Our current findings were interesting, they revealed differences between the Saudi Arabian and UK groups in terms of knowledge, experience, attitudes towards CAN, perceived barriers that prevent reporting suspected CAN cases and previous training in child protection. The overall knowledge in CAN was lacking in both study groups. The UK group saw a larger number of children with neglected dentition (85.2 per cent) compared to the KSA group (56.5 per cent). However, dental practitioners working in KSA whom suspected child abuse in the last 5 years of practice were almost double the proportion of the UK group and there was a significant difference between the two groups in

terms of suspecting different types of child abuse (physical, emotional and sexual abuse and neglect) in the dental practice at $p < 0.05$. It is alarming to see that although dental practitioners working in KSA suspected more cases of abuse, dentists working in the UK took more positive actions towards reporting suspected CAN cases. Almost 9 out of 10 of the UK sample knew of a child protection protocol in their practices yet surprisingly only 53.2 per cent of the dentists suspecting abuse contacted social services. This percentage is fairly poor, especially since protocols are known to most of them. Very little action was taken by dental practitioners who suspected abuse from the Saudi group; this could be explained by perceived barriers that prevent practitioners from reporting CAN, more barriers were perceived by dentists in the KSA group compared to the UK group, moreover, a lack of knowledge in child protection protocols was observed, where only one in five KSA dentists had knowledge of such protocol, and almost non-existent (3.3 per cent) child protection training was observed in the KSA group compared to the UK group (69.6 per cent).

Consequently, when both groups were asked about their attitudes towards child protection training, there was a significant difference between the groups where the Saudi group reported that they needed more training than the UK group at $p < 0.05$.

Upon exploring findings of this study in more detail; firstly by exploring the results related to knowledge in child abuse and neglect, the following were observed;

Significant differences were found in knowledge between the UK and KSA groups in all items except ‘calling names and verbal humiliation’ which are items related to **‘knowledge in forms of child abuse and neglect’**.

UK dentists had the most training in child protection (69.64 per cent) and had better knowledge in different forms of CAN (total score 94.6 per cent excluding non-injurious spanking). Around 18 per cent of this sample regarded ‘non-injurious spanking’ a form of CAN. Nearly half of the sample (44.7 per cent) believed that non-injurious spanking was not a form of CAN while the rest offered no views on the matter. It is obvious that corporal punishment is considered controversial. It remains lawful to use corporal punishment by parents; although it is prohibited in schools; the penal system and some care organisations throughout the UK (Global report, Global Initiative to End All Corporal Punishment of children 2013).

Much of the Saudi sample had adequate knowledge about different forms of CAN. The average total score was 84.2 per cent in response to all questions excluding ‘non-injurious spanking’. These findings are in agreement with a similar published study done on paediatricians in Saudi Arabia (Habib, 2012). In his study, Habib considered a knowledge score of 79.0 per cent or less as deficient, this criteria was used to score knowledge in this study. Similar findings were also reported in a study done on dentists in Jordan (Owais et al, 2009). It was interesting to report that around half participants of the Saudi group in this study (52.5 per cent) agreed that non-injurious spanking (corporal punishment) was a form of child abuse and neglect. This number is surprisingly high, in contrast to a study of n= 1897 Saudi female university students at King Abdul-

Aziz University in Jeddah in the western province of Saudi Arabia, during the educational years 2007/ 2008 that found around 75 per cent of these students had experienced a form of corporal punishment by a member of their family (Ibrahim et al, 2008). Moreover, a 2013 report done by Global Initiative to End All Corporal Punishment of Children in Saudi Arabia revealed that corporal punishment is not prohibited in any setting. The report also states that regulations implementing the Child Protection Act are under discussion and are being drafted.

In the current study, a high proportion of dentists from the Saudi group believed corporal punishment to be a form of child abuse given the information that there are still no laws that prevent corporal punishment in Saudi Arabia. One explanation could be a high proportion of respondents who are University faculty (41 per cent); they might be exposed to more literature on child protection. Moreover, 13 per cent of dental practitioners in the Saudi group were paediatric dentists; which may explain possible increased awareness about corporal punishment of children.

'Failure to seek needed medical treatment', 'neglect of child education' and 'lack of interest in a child's problems' are different forms of neglect. While 'Beating with a hand or object causing injury' and 'non-injurious spanking' are related to physical abuse while the last item is 'sexual abuse'.

It was not a surprise to see that there was a tendency for those participants who had undergone training in child protection to have more knowledge in identifying forms of child abuse and neglect. And since almost three quarters of dentists in

the UK group had attended some sort of training while almost none did from the Saudi group; dental practitioners working in the UK had better knowledge in general. Female gender seems to be a determinant to correctly answer questions related to knowledge of forms of CAN at borderline significance. This could be explained by the nurturing and protective nature females have with children in general. This is not a surprise either, since similar results were previously reported, where education and the female gender of participants were determinant factors related to CAN knowledge (Manea et al., 2007).

It was a surprise however to see that only 83.6 per cent of the Saudi group agreed that 'sexual abuse' was a form of CAN. A previous study done on French dentists had similar findings (Drigeard et al., 2012), and interestingly both the Saudi sample in this study and the French sample had deficiencies in child protection training.

In regards to **'knowledge about factors that may increase the risk of child abuse and neglect',** the Saudi group had better responses in all items except one. Significant differences were observed in eight out of 13 items between the UK and KSA groups. Again, the female gender seemed to be the predictor of knowledge in risk factors to CAN.

'Caregiver substance abuse' was the only risk factor that had positive responses from most UK dentists (95.8 per cent) compared to the Saudi Arabian group (78.7 per cent).

In the UK group, knowledge in CAN risk factors was deficient; a total score of 51.9 per cent was obtained from the UK group compared to 63.7 per cent total score by the KSA group. One item; ‘medium to high socio-economic status’ was removed when calculating total scores due to possible confusion in understanding this item, especially since child maltreatment could be observed in families of medium to high socio economic status, however it is not actually labelled as a risk factor.

Generally, below expected knowledge in CAN risk factors was observed in dentists working in the UK even though 69.6 per cent of UK dentists have attended training in child protection. Such a gap in knowledge of CAN risk factors in the UK group may still reflect a gap in content of training programs available for dental practitioners although educational resources such as ‘child protection and the dental team’ funded by the department of health in 2006 (Harris et al., 2006) has a section on risk factors and vulnerable groups to CAN.

Knowledge in CAN risk factors was a little better in the Saudi Arabian group, however, it was still deficient. Not enough research was done to study the knowledge of risk factors although such evidence can be essential to provide effective training. Any health care provider working directly or indirectly with children ought to have a comprehensive understanding of the causation as well as signs and symptoms of child maltreatment.

A significant difference between the two groups’ knowledge were evident in the following items; ‘child under 2 years’, ‘child with disability’, ‘caregiver substance abuse’, ‘family with step parent’, ‘ family with single mother’, ‘family with single

father', 'loss of job', 'low socio-economic status', and 'medium to high socio-economic status'.

Just over one half of the UK group (54.2 per cent) and similarly, just less than one half of the KSA group (48.4 per cent) agreed that **children less than 2 years of age** are at higher risk to CAN. Although previous published studies reported that age of the child plays a part in susceptibility to CAN; children of 2 years old and less are more likely to be at risk to CAN due to their vulnerability and complete dependence (Naidoo, 2000; Dubowitz & Black, 2001; Cairns et al., 2005b). The fatality rate is also at its highest in this age group (Phillips and van der Heyde, 2006).

Similar findings were seen between the two groups; around three quarters from both groups agreed that **children with disability** are at a high risk of CAN. However, a lower proportion of dentists from both groups agreed that '**children with a medical condition**' have a high risk of abuse as well.

Less than one half of the UK group and around three quarters of the KSA group agreed that **low socio-economic** status was a risk factor for CAN. Similar response patterns to the UK group were found in previous studies (Manea et al., 2007; Sonbol, et al., 2012). Several previous studies (Garbarino & Kostelny, 1992; Kotch et al., 1995) have shown that poverty and low income are known to be linked to CAN. Gillham et al. in 1998 also found a link between parent's unemployment and the risk of child maltreatment. Only 41.7 per cent of UK dentists and around three quarters of the KSA group in this study agreed that 'loss of a job' is a risk factor to CAN. However, in contrast, 93.0 per cent of

dental practitioners in the USA believed that CAN cases are not confined to poor families (Ramos-Gomez et al., 1998). Only one in ten UK dentists and around one quarter of KSA dentists agreed to the following **statement 'medium to high socio-economic statuses'** are risk factors for CAN. However it is important for healthcare providers to understand that child maltreatment is not confined to poverty and low socio-economic classes. Families of middle to high socioeconomic status can also be at risk of CAN.

Young parental age was considered a risk factor due to heightened stresses that arise with child rearing and increased financial burden, and around 6 out of 10 dentists from both groups agreed. Previous studies have linked young parental age (<19 years) to CAN (Brown et al., 1998; Egeland et al., 2002). Similarly, around 6 out of 10 dentists from both groups in this study believed **overcrowded households** to be a risk factor; and previous studies have shown that family characteristics such as large families and overcrowded households may cause child maltreatment (Isaranurug et al., 2001).

Several risk factors associated with family structure such **as polygamous families, family with a step parent, family with single mother or single father** had a lower agreement rate among the UK group when compared with the Saudi Arabian group. This could be explained by a higher proportion of KSA dentists working in both Public hospitals and Universities; where they see a larger number of diverse cases and patients as well as the higher proportion of paediatric dentists and orthodontists compared to the UK group. Most dentists in the UK group work in the private sector (65.5 per cent) where they might be

exposed to fewer patients. Furthermore polygamy is illegal in the UK so dentists have probably not experienced patients in that group.

Significant differences were observed between the two groups in three out of six items related to **'knowledge in common manifestations of physical abuse'**. Specialty was the only predictor in this category of knowledge; specialized dental practitioners had better knowledge so did female and BDS holders, the two latter variables were however non-significant.

A larger proportion of dental practitioners from the KSA group (78.7 per cent) compared to 47.0 per cent of the UK group agreed that **'injuries to palms of hands'** are common manifestations of physical abuse. Abused children use their hands in order to protect other parts of their bodies from physical abuse; which makes it very important to examine their hands (Johnson et al., 1990; Da Fonseca et al., 1992).

Around three quarters of the UK group and 63.1per cent of the KSA group **identified' bone fractures'**. Previous studies proved that bone fractures are common manifestations of physical abuse especially in younger children and when history provided does not agree with the injury (Naidoo, 2000; Phillips & van der Heyde, 2006; Kemp et al, 2008).

Around 86.0 per cent from both groups identified '**skin and mucosal burns'** as common manifestations of physical abuse. Similar findings were observed in two previous studies where 84.0 per cent of dentists identified burns as common in abuse (Ramos-Gomez et al., 1998; Owais et al., 2009), a lower percentage (67 per cent) was observed by Sonbol et al. in 2012. On the other

hand very few dental practitioners associated burns with child abuse in other studies (Al-Jundi et al., 2010, El Sarraf et al., 2012).

Around 69.0 per cent of participants in both groups recognized that **bruising on the neck** was a manifestation of physical abuse unlike the results found in an older study done in the USA where a high portion (91.0 per cent) of dental practitioners recognized ‘bruises that circumscribe the neck’ as physical indications of child abuse and neglect (Ramoz-Gomez et al., 1998). Another study reported even lower knowledge for this item; however, the study was done on dental students in Jordan whom lacked experience in the field; 25.0 per cent of undergraduate students and 20.7 per cent of postgraduate students agreed that bruises that circumscribe the neck are usually associated with non-accidental trauma (Al-Jundi et al., 2010). Interestingly, a study conducted in the UK found neck abrasions and bruising in 18.2 per cent of children examined who suffered from physical abuse (Cairns et al, 2005b). The head and neck region is often the target of impulsive violence therefore it is common to see trauma from abuse in the area (Cairns et al., 2005b).

In regards to **oro-facial injuries**, more than 8 out of 10 dentists in both groups agreed that such injuries are common in physical abuse cases. Several studies in the past have reported that sites of physical injury were located in the head, face, mouth and neck areas in 50-75 per cent of reported physically abused children (Becker et al., 1978; Da Fonseca et al., 1992; Jessee, 1995; Naidoo, 2000; Cairns et al., 2005; Cavalcanti, 2010).

Dentists from both groups had deficient knowledge in regards to common manifestations of physical abuse in general, but surprisingly the UK group had a slightly lower cumulative total score (68.0 per cent) than the KSA group (74.0 per cent). Similar results were reported by previous studies (Owais et al, 2009; Sonbol et al., 2012; Hashim & Al-Ani 2013), likewise, in comparing dentists to physicians and nurses; dentists were found to have the least amount of knowledge in identifying child physical abuse compared to the other groups (Lazenbatt and Freeman, 2006). These results indicate the persistent need for training in identifying common features of physical abuse in both groups.

As for **'knowledge in observed indicators of CAN'**, there were significant differences in five out of nine items related to this question. Training was the only predictor; dentists with previous child protection training had more knowledge. The UK group had a slightly higher overall score; 66.3 per cent for the UK group and 57.8 per cent for the KSA group.

A higher percentage of dentists in the UK group (93.5 per cent) compared to the KSA group (81.1 per cent) agreed that bruises on **soft tissue of the cheek and neck** were indicative of CAN.

Around three quarters of UK based dentists and only around half of dentists from the KSA group agreed that **intra-oral injuries** were indicators of child abuse. Similarly, trauma to the teeth was perceived as an indicator of abuse in 62.0 per cent of Jordanian dentists (Owais et al., 2009) while repeated dental trauma was perceived an indicator of CAN in 60.0 per cent of Jordanian dentists (Sonbol et al, 2012). However, better results were reported by Al-Habsi et al.

(2009) where almost all dental practitioners working in London agreed that fraenum laceration and tooth fracture could be signs of abuse. Lower results were previously reported by John et al. (1999) where only 41.0 per cent of dentists identified oro-dental injuries as signs of child abuse.

A bruise on a toddler's forehead was observed as an indicator of child abuse in only 18.5 per cent of UK dentists while almost half (47.0 per cent) disagreed. On the other hand only 9.0 per cent of dentist in the KSA group answered correctly. The forehead is a prominent area which is subjected to accidental trauma such as falls, most commonly observed in toddlers and little children, and it is obvious that some participants in the UK group had better awareness about this information in contrast to the Saudi group due to having previous child protection training. Comparable studies to the Saudi group had similar findings; for example, when Sonbol et al. (2012) asked Jordanian dentists if bruises over bony prominences are suspicious of abuse (example chin, elbows, knees); only 35.0 per cent gave the correct answer 'false'. Hashim and Al-Ani reported 79.2 per cent of UAE dental students agreed that physical abuse usually occurs in areas overlying bony prominences. This type of information is very helpful for dentists to make more sound judgements when faced with such injuries in the dental surgery.

Around three quarters of the Saudi group and only half of the UK group agreed that **poor general health** of a child indicates child abuse. There was a significant difference at $p < 0.001$. Dental practitioners from the Saudi group who agreed **head lice** was an indicator to abuse were almost double the percentage of UK participants. There was a significant difference at $p < 0.001$. Although poor

general health can be perceived as an indicator of child neglect, due to failure to provide the child with medical care when needed as a result of negligence; head-lice is indicative of child neglect only if persistent and untreated; especially since head-lice can easily spread among school children.

Overt sexually suggestive behaviour was observed as indicator of CAN in 81.0 per cent of UK dentists and similarly in 77.9 per cent of KSA dentists. Similar findings were observed in the USA by Ramoz-Gomez et al. (1998) where 76.0 per cent of dentists agreed that a child's seductive behaviour and unusual knowledge about sexual matters were a sign or indicator to CAN.

Signs of delayed social and intellectual development, child's poor general hygiene, child's poor general health and rampant caries are all different indicators of child neglect; and dentists from both groups didn't score well in most of these items. Although Harris and colleagues in 2013 reported more than half of dentists in their sample were knowledgeable about points related to neglect such as irregular attendance to the dental clinic, failure to complete treatment, repeated dental pain and extraction under general anaesthesia. Those dentists had previous CAN training.

Emotional neglect may affect the child's ability to thrive socially and intellectually. A child's persistent poor hygiene is also a sign of child neglect. Not providing a child with necessary medical health care can be an indicator of child neglect especially when the caregiver is careless and shows frequent negligence when it comes to compliance to needed medical care.

Rampant caries can be due to failure of the caregiver in providing proper oral hygiene and diet, therefore dental neglect is perceived to be within the scope of child neglect. Rampant caries was identified as a sign of child neglect in 69.0 per cent of UK dentists and even lower (59.0 per cent) among KSA dentist. It is worth mentioning that untreated tooth decay can be due to dental care being unavailable or inaccessible; many families find it difficult and challenging to access dental care or obtain insurance for their children's dental treatment. The dentist should determine whether dental services are readily available and accessible to the child when considering if dental neglect has occurred. Dental neglect is considered a form of CAN when care-givers are aware of the child's need for dental care but wilfully deny the child from dental care (AAPD, 2005). Similar responses were seen in specialists and consultants in a study done in the UK; however, only 13.0 per cent of GDPs agreed that dental caries was a form of neglect (Al-Habsi et al., 2009). A low proportion of dentists (48.0 per cent) also agreed that a strong correlation exists between dental neglect and the presence of physical neglect (Ramos-Gomez et al., 1998). Poor knowledge was observed from both groups in regards to identifying rampant dental caries as indicator of child neglect. Dental caries is considered the most common oral disease affecting children, and since the main purpose of dentistry is prevention of oral disease, it is essential that the dental team identify the cause of dental disease, and assess each case individually; and based on this assessment, sound judgement should be made to identify whether the cause is negligence or lack of awareness so that proper steps are taken in treating the case and preventing disease from reoccurring.

In regards to knowledge about child abuse and neglect in general and clinical observable signs of abuse, this research shows that previous training, female gender and being specialized were the only significant predictors of knowledge.

The second findings to be explored in this study are related to experience with child abuse and neglect;

A significant difference was observed between dental practitioners in the UK and KSA groups in terms of the **number of children seen with neglected dentition** at $p < 0.0001$. The only predictor observed in this study was non-specialized dental practitioners (GDPs). These dentists are known to see larger numbers of patients including children in their practice and therefore are in a better position to recognize dental neglect cases. Specialized dentists except for paediatric dentists and orthodontists sometimes rarely ever see children in their practice. Borderline predictors in this study were the male gender and the older age group. The older age group could suggest more years of experience to be able to differentiate between dental disease caused by neglect or lack of awareness.

The UK group identified more cases of children with neglected dentition than the KSA group in this study. This finding is in agreement with dentists' knowledge about rampant caries that was discussed previously (UK dentists had better knowledge than Saudi dentists although non-significant), and is also in agreement with a study done by Harris et al., 2013, where 77.0 per cent of dentists linked dental caries to CAN. On the other hand, there is a tendency for

dentists to separate between CAN and dental neglect where a child is perceived not to be at risk of significant harm from dental neglect as compared to general neglect (Harris et al., 2009c). This observation could be mainly due to lack of child protection training in the Saudi group, especially since most child protection training programs and material catered for dentists frequently emphasize the dentist's role in recognizing dental neglect; a subtype of child neglect. In the current study, 85.2 per cent of UK dentists saw at least one case of neglected dentition in the last five years, in a study done on UK dentists by Harris et al. (2009b), 81.0 per cent of respondents stated that they saw children with neglected dentitions once a week or more frequently, and 59.9 per cent of them reported this once daily or more often. However, paediatric dentists represented a higher proportion of their sample compared to UK dentists in this study.

Surprisingly, a larger proportion (59.0 per cent) of dentists from the Saudi group **suspected cases of CAN** in the last five years compared to the UK group (28.0 per cent), although dentists in the UK were more qualified to detect CAN due to previous CAN training.

Similar findings to the UK group results were found in an earlier study done in Scotland by Cairns et al. (2005a) where 29.0 per cent of respondents had suspected child abuse in one or more of their patients during their career. However, a more recent study done in the UK reported 37.0 per cent who have suspected CAN, and most of them had previous CAN training (Harris et al.,

2013). A study done by Drigeard in 2012 reported 30.0 per cent suspecting CAN in France although they hardly had any training. Similar results were reported by other studies; for example; in the UK Chadwick et al. (2009) reported 34.0 per cent of dental therapists suspected at least one case of child abuse throughout their careers; in the USA, 36.0 per cent of responding dentists reported they had suspected at least one case of child abuse (Bsoul et al., 2003), and in Denmark, Uldum et al. (2010) reported 38.0 per cent of participants suspecting abuse.

On the other hand, higher ratios of suspected cases were reported by other studies that are comparable to the KSA group results. For example, Jordanian dentists reported that 50.0 per cent had suspected CAN (Sonbol et al., 2012); similarly, 42.0 per cent of dentists in Jordan suspected cases of CAN in the last year just previous to completing the survey (Owais et al., 2009). Around two thirds (67.0 per cent) of UK dentists have suspected at least one case of CAN (Harris et al., 2009b). In Ireland, 60.0 per cent of health care providers (nurses, medical doctors and dentists) had seen at least one case of suspected CAN (Lazenbatt & Freeman, 2006). Furthermore, similar findings were observed in a study done by Russell et al. (2004) on UK dentists where 58.0 per cent of health care providers also suspected cases of CAN.

Age was the only predictor for suspecting CAN at borderline significance p= 0.058 in this study; younger age groups were more likely to suspect more cases of CAN. The younger age group (40 years or less) represented around three quarters of the KSA sample (73.8 per cent) and only 34.5 per cent of the UK sample. This finding is surprising and conflicts with previous studies; Cairns et

al. (2005a) and Chadwick et al. (2009) showed that those dentists receiving postgraduate training were more likely to suspect CAN than others. Chadwick et al. also reported that dentists with more years of experience were likely to suspect more cases of CAN than practitioners with less years of experience. Since no actual predictor was observed from the results of this research, further research is recommended.

In this study, a significant difference was found between the two groups in suspecting all types of abuse (physical, emotional, sexual abuse and neglect). Dental practitioners from the KSA group suspected more cases of all types of CAN. Interestingly in the UK group, more dentists suspected neglect (25.0 per cent), then physical abuse (14.9 per cent), followed by emotional abuse (14.3 per cent) and sexual abuse was the least suspected (6.0 per cent). In the KSA group, more dentists (51.7 per cent) suspected neglect and emotional abuse, followed by physical abuse (46.8 per cent) then sexual abuse (24.6 per cent). The nature of this study may vary from previous studies due to variances in methodology, however, these results correspond to previous studies. For example, in a Greek study by Laud et al. (2012), 8.2 per cent of dentists suspected emotional abuse, followed by 7.1 per cent who suspected physical abuse, then sexual abuse (0.5 per cent); while 34.8 per cent of dentists suspected child neglect at one or more occasion throughout their professional career. Another study showed that only around 7.0 per cent of dentists believed to have suspected child physical abuse compared to 13.0 per cent who have suspected child neglect (Newcity et al., 2011). In this study; dentists have suspected child neglect more than they have other forms of child abuse, and

these findings do correspond with previous studies that suggest child neglect is more common than other forms of child abuse.

There was a significant difference in the **types of action taken by dentists after suspecting abuse** between UK and KSA groups in this study; UK dentists took more positive action in general compared to the KSA group. The proportion of KSA dentists who did not take any action was around one in five dentists and was three folds the UK group. A larger proportion (68.1 per cent) of UK dentists recorded the incident in the patient's medical records while only 39.4 per cent of KSA dentists did so. In regards to discussing the case with the child's care giver, a senior staff member or a colleague; both KSA and UK dentists had similar results. However, more than half the UK group who suspected abuse contacted social services compared to only 7.0 per cent of the KSA group, and very few participants from both groups contacted the police. A similar finding to the KSA results was reported by Owais and colleagues where only 20.0 per cent of dentists had actually reported a suspected case of CAN and an even smaller percentage (12.0 per cent) was reported by Sonbol et al. (2012). Similarly, although 61.0 per cent Brazilian professionals acknowledged the importance of reporting child abuse cases, only 30.0 per cent were knowledgeable about who to contact in case of suspected CAN and only 2 out of 10 professionals had reported suspicious cases of abuse, however, only 3.5 per cent notified it to the competent authorities (Losso et al., 2012).

Two studies (Russell et al., 2004; Lazenbatt & Freeman, 2006) surveying health care providers to measure their knowledge and attitude towards reporting CAN had comparable reporting rates to the UK group where 47.0 per cent of dentists reported suspected cases of CAN. Other UK studies showed low reporting rates; only 29.0 per cent of dentists had ever made a child protection referral, and no referrals were made by around one third (32.0 per cent) of the dentists who suspected abuse (Harris et al., 2009b). In another study, only 8.0 per cent of dentists reported cases of suspected abuse and only 56.0 per cent of them documented their observations in the clinical notes (Cairns et al., 2005a). In a study by Al-Habsi et al. (2009), almost one in three UK dentists who suspected CAN made a report while almost every 1 in 6 professionals in Italy whom suspected abuse indicated having contacted social workers for the sake of the child's health and security and reported their suspicions to authorities (Manea et al., 2007). Another study by Laud et al. (2013) found only 6 dentists out of the 175 whom suspected abuse or neglect actually made an official report of a suspected case of CAN.

In the present study, more than half of UK dentists discussed suspected cases of CAN with social workers or colleagues and two in three dentists documented their observations in the medical file while Chadwick et al. (2009) found 83 per cent of those suspecting CAN recorded findings in their notes. Good record keeping is essential in dentistry and its importance is stressed by defence organisations. When suspecting CAN, any significant signs or physical injuries should be documented as soon as they are seen by dentists, for example taking notes of any abnormal interaction between a child and caregiver or parent.

Photographic evidence of physical injuries can serve as vital information in any child protection procedures (Cairns et al., 2005a). A special form for recording findings related to suspected cases of CAN should be provided in dental clinics. Dental practitioners should be trained to handle such cases and fill out such forms. It was not surprising to find in this study that the highest proportion of dentists from both groups discussed suspected cases with colleagues, especially since they are easily accessible, and non-threatening; dentists are likely to feel more comfortable when discussing such sensitive matters within their professional circles. Discussing the case with the child's caregiver followed, then discussing the case with a senior staff.

Reporting child abuse and neglect among the Saudi group is very low in this study, yet interestingly is still comparable to some previous reports mentioned. Although 79.5 per cent of the KSA sample is willing to report a suspected case of CAN and 62.6 per cent of dentists working in KSA prefer to discuss a case of CAN with a social worker, in reality only a small percentage (7.0 per cent) actually did. This large gap between willingness to report and actual reporting could be mainly due to absence of knowledge and training in reporting procedures and pathways since only 19.7 per cent of KSA dentists were aware of a child protection protocol in the work place; moreover this indicates lack of communication between dental practitioners and social workers working on child protection in Saudi Arabia.

The present study confirms that dental practitioners are reluctant to report child maltreatment and a gap still exists between suspecting and reporting abuse, which was also reported by previous studies (Ramos-Gomez et al., 1998;

Kilpatrick et al., 1999; John et al., 1999; Welbury et al., 2003; Cairns et al., 2005a; Manea et al., 2007; Al-Habsi et al., 2009). Although 94.0 per cent of UK dentists were willing to report a suspected case of CAN and 89.0 per cent were aware of child protection protocols at work, the proportion of dentists reporting suspected cases of child abuse was still considerably low.

Lazenbatt and Freeman (2006) reported that dental practitioners were least likely to recognize, report and also be involved in detection of CAN compared to nurses and physicians. Chadwick et al. (2009) also reported that dentists suspecting CAN are more likely to record their findings in the medical record but are reluctant to refer cases. DeMattei and Sherry (2011) suggested that appropriate training should be complemented with adequate support from professionals in child protection to help make critical reporting decisions.

Under-reporting of child abuse among dentists and healthcare workers is a problem faced by many different societies; several **barriers are noted by different researchers that prevent dentists from reporting suspected cases of CAN.** A significant difference between participants' responses in this study was observed in 9 out of 11 barriers. In this study dentists from the KSA group had reported having more barriers preventing them from reporting suspected cases of CAN. The main predictor was previous child protection training; dentists with no training perceived more barriers at p= 0.006. Gender was the second predictor at p= 0.019. Female dentists seem to have more barriers preventing reporting CAN. Cairns et al. (2005a) reported that female

respondents and younger dental practitioners feared factors such as family violence against the child or against the practitioner and fear of litigation.

Barriers related to fear over the child were common; fear of family violence towards the child was the main barrier reported by Saudi dentists in this study; 82.0 per cent of Saudi dentists and 64.9 per cent of UK dentists reported so. Also, fear of unknown consequence to the child was the third barrier most commonly reported by UK dentists (61.9 per cent) and by 73.8 per cent of KSA dentists. The Saudi group had higher anxiety towards the child and this could be explained by the lack of clear understanding of child protection laws in Saudi Arabia. Similar findings to the Saudi group were reported by John et al. (1999) and Al-Habsi et al. (2009). Similar results to the UK group were also reported by previous studies (Chadwick et al., 2009; Harris et al., 2009b; Owais et al., 2009; Uldum et al., 2010). A qualitative study reported by Welbury et al. in 2003 also found that dentists were worried about the outcome of reporting CAN on the child and family and were fearful of making the situation worse for the child.

It is worrisome however that a high percentage of UK dentists still fear for children's safety after reporting suspected abuse although legislation in the UK about steps that are taken in child protection were made clear to empower the dental team to report suspected cases of CAN. This fear might point toward an inclination of UK dentists believing that a gap still exists between legislation that are set and actual child protection, although consequences of failing to report child maltreatment could be much worse and life-threatening (Laming, 2003). Consequently, it is necessary that dental professionals recognize the role social

services have in giving support to help those families of abused or neglected children.

'Lack of certainty about diagnosis' was the 2nd most common barrier reported by Saudi dentists (74.6 per cent), surprisingly, it was the main barrier reported by most UK dentists (90.5 per cent) in this study and one of the highest reports compared to previous studies; Cairns et al. 2005a; Al-Habsi et al.; John et al. and Uldum et al. who reported a range from 80-88 per cent of participants agreeing that uncertainty about diagnosis of CAN is a barrier to reporting. Other studies reported lower ratios (Harris et al., 2009; Owais et al., 2009; Chadwick et al., 2009; Sonbol et al., 2012). It is alarming that almost all dental practitioners in the UK sample still lack confidence in their ability to detect CAN, even though more than two thirds have attended training. This raises questions about the type of training they have previously obtained and the last time they attained it. Although it is still understandable that dental practitioners are worried about misdiagnosing child abuse; especially due to the complexity of the nature of abuse. Often the symptoms of abuse are not obvious, since children are most likely to obtain different types of trauma due to accidents; also, risk factors as well as the relationship the child has with the parent or the abuser may not be evident and clear for the practitioner to pick up easily especially because of the busy time frame the dentists have to carry out a dental procedure. All that said, emphasis should be made to dental practitioners that they are not required to make out a diagnosis of abuse but rather to report suspected cases of CAN. Specialists in the field are later required to follow up these cases and do further investigations.

Lack of knowledge in referral procedures was the third most common barrier reported by Saudi dentists (73.8 per cent) compared to around half of the UK group (53.6 per cent). In this study, only 21.0 per cent of Saudi dentists knew of an existing protocol at work that deals with child abuse and neglect while the majority of UK dentists (91.5 per cent) did. Similar results to the KSA group were previously reported (Cairns et al., 2005a; Al-Habsi et al., 2009). Uldum et al. (2010) reported similar results to the UK group; other studies found fewer dentists who reported lack of knowledge in referral procedures as a barrier to reporting CAN (Chadwick et al., 2009; Sonbol et al., 2012). Health care professionals have become responsible for reporting suspected CAN cases. Therefore they are also responsible for seeking knowledge about reporting procedures. However, this lack of knowledge in the Saudi group can be attributed to the lack of training, as well as the lack of awareness of their responsibilities towards safeguarding children, especially since almost half the KSA group in this study did not know about their legal obligation towards child protection nor did they think they had any.

Fear of negative effects on the child's family had similar reports in the two groups where 58.8 per cent of KSA dentists and 49.4 per cent of UK dentists agreed it was a barrier to CAN reporting. Similar results were also reported by previous studies (John et al., 1999; Owais et al., 2009).

Almost half of KSA dentists and almost one third of UK dentists reported family violence against dentists as a barrier to reporting suspected CAN. Owais et al. in 2009 had similar findings; however, previous studies reported lower results

(Cairns et al., 2005a; Al-Habsi et al., 2009; Harris et al., 2009b; Chadwick et al., 2009).

Concern about confidentiality was reported as a barrier by more than half of Saudi dentists and 42.0 per cent of UK dentists. Owais et al. (2009) reported similar findings. Fewer number of dentists reported so in previous studies (John et al., 1999; Harris et al., 2009b).

In this study, around half of dentists in the Saudi sample and only 10.0 per cent of the UK group do not know about their legal obligations or think they do not have any in regards to child protection. Owais et al. (2009) reported that 22.0 per cent of Jordanian dentists did not believe it is their responsibility to report CAN. The KSA sample in this study might not actually represent the Saudi dental sample due to the high proportion of University faculty, postgraduate degree holders as well as paediatric dentists. Therefore, it is distressing that the actual Saudi dental population might show a larger percentage of dentists who think they have no legal obligation towards child protection.

Fears of negative impact on dental practice, fear of litigation or reporting child abuse is against social norms are all least reported by both KSA and UK dentists in this study. However, Saudi dentists had higher concerns in these areas than UK dentists. Similar findings were also reported by previous studies where those barriers were reported by fewer dentists; Kilpatrick et al., 1999 on fear of litigation; John et al., 1999; on fear of litigation and effect on dental practice; Cairns et al., 2005 on impact on dental practice; Harris et al., on fear of litigation and impact on practice; Chadwick et al., 2009 on fear of litigation and

impact on dental practice; Owais et al., 2009 on fear of litigation; Uldum et al., 2010 and Sonbol et al., 2012 on impact on dental practice.

Fear of adverse consequences was a main factor preventing dental practitioners, especially those working in Saudi Arabia from reporting suspected abuse. This fear is created primarily by the lack of knowledge about CAN diagnosis, child protection policies and legal pathways in the country. Although health care providers in Saudi Arabia are now legally obliged to report suspected cases of CAN, it is important to note that dental practitioners are not required to diagnose a case before making a referral; diagnosis is the shared responsibility of the child protection team (Harris et al., 2009), and the child protection team in Saudi Arabia consists of a paediatric physician, a psychologist and a social worker (Almuneef and Al-Eissa, 2011).

As mentioned earlier, having experience of **child protection training** was reported by 69.6 per cent of the UK group and was almost non-existent (3.3 per cent) in the KSA group. Interestingly, comparable results to the Saudi outcome were reported by Habib in a study done on paediatricians in 2012 working in KSA as well as a study done in France where most dentists (93.9 per cent) did not have training in child protection (Drigeard et al., 2012). In the UK, just over one quarter (26.5 per cent) of participants attended formal training in undergraduate level. It is important to note that 65.5 per cent of UK participants are of age 40 years and above, this could explain the lack of CAN training in undergraduate levels since CAN training was only emphasized in 2003 after the high profile incidence of the death of Victoria Climbie, when Lord Laming made recommendations about child protection training of all health care providers that

are in contact with children. Similar findings were reported by Harris et al. (2009) where twenty six per cent of respondents reported child protection had been included in their undergraduate or initial training level. Chadwick et al. (2009) reported higher proportions; just over one third of dentists recalled receiving child protection training during their undergraduate training while Cairns et al. reported lower proportions (19.0 per cent). Previous studies have reported that the number of practitioners receiving undergraduate training fall as the number of years since obtaining their qualification increases (Cairns et al., 2005a; Chadwick et al., 2009). Almost all dental practitioners with postgraduate qualifications in the UK group had training in CAN as part of their postgraduate training; since almost 37.0 per cent of dental practitioners in the UK group had some form of postgraduate qualifications which is in agreement with the proportion of dentists (35.0 per cent) who received child protection training in their postgraduate studies.

In this study around 58.2 per cent of UK dentists underwent training since their graduation and similar findings were reported by previous studies (Cairns et al., 2005a; Chadwick et al., 2009). However, Harris et al. (2009b) reported a higher proportion (87.0 per cent). These results fall short to the recommendations made by Lord Laming; that all healthcare providers are to receive training in safeguarding children. Courses in child protection can be unappealing for dental practitioners who are interested in clinical training and especially those dentists who do not see many children in the dental surgery.

Over three quarters of UK dentists in this study (78.6 per cent) welcome further training in CAN compared to 86.1 per cent of the KSA group. Other studies

reported similar results (Lazenbatt and Freeman 2006; Harris et al., 2009b; Uldum et al., 2010; Drigeard et al., 2012) and to a lesser degree in a study by Chadwick et al. which reported 68 per cent indicated that they would welcome additional training. While there is evidence that training can increase awareness of child abuse, it does not appear that training alone empowers members of the dental team to act on their suspicions and report CAN. Previous studies have reported that a gap still existed between recognizing and reporting child abuse and neglect. Although in 2006, the importance of child protection in dentistry was highly emphasised when all NHS dental practices in England and Scotland received the Department of Health-funded handbook *Child protection and the dental team* (Al-Habsi et al., 2009; Chadwick et al., 2009; Harris et al., 2009b).

Almost all UK dentists in this study (96.4 per cent) and 87.7 per cent of the KSA group agreed that dentists' knowledge about child protection protocols is important. Acknowledging this is vital; it displays willingness of dentists to take up training and more proactive roles in safeguarding children.

Interestingly, when dentists were asked about their confidence in recognizing signs of CAN; 38.7 per cent of the UK group and 44.3 per cent of the KSA group agreed they were confident. The Saudi group expressing overconfidence in recognizing sings of CAN, with almost no training is worrying. Overconfidence may lead to not seeking training. One would expect the UK group to have more confidence due to the training they obtained, but it seems more complex. It is important to note that brief training may raise awareness but it is unlikely to prepare dentists and provide them with the skills needed to respond effectively to the challenging task of recognizing and reporting child abuse and neglect.

Training in child protection should be periodically updated to be familiar with current guidelines and recent legislation (Welbury et al., 2003). Also, multi-agency training of a mixed group that might include for example; a dental professional, social worker and or police rather than training delivered by a dentist alone is recommended to overcome some barriers such as lack of confidence or uncertainty about reporting pathways, moreover, if the training was through distant learning or via hands on workshop are all important factors in increasing skills.

The findings of this study cannot be taken to present the current knowledge, experience and attitudes of dentists from both groups in child protection. The response rate was low from both countries but in particular from the KSA group. It is likely that the low response rate has affected the results since respondents from both countries are more likely to have an interest in the subject of CAN when compared to non-respondents, therefore have initial knowledge about the subject to start with. In the UK group, a high proportion of dentists work in private dental clinics and very little work for the NHS, moreover, other demographics such as age, degrees and specialties are not representative of the dentist population in the UK. Similarly in the KSA group, more respondents worked in University hospitals, and more dentists from both specialties; paediatric dentistry and orthodontics responded to the survey which also indicates the possibility that participants are initially interested in the subject of child protection. Furthermore, the response rate in both groups was low suggesting the need for further research in the future about knowledge, experience and attitudes of dentists towards safeguarding children in both

countries and especially in Saudi Arabia. In both groups, lack of interest or knowledge in the subject could have deferred dentists from participating. It is notable that one fifth of the KSA group underwent their basic dental training in non-KSA countries. While data on the specific country of origin for these individuals was not collected in this survey, it is likely on the basis of the demographics of KSA dentists that the majority are from Arab countries in the proximity of KSA, very few would be Europe or North America trained. Such countries may not have similar basic training in CAN as the Western or KSA groups.

Also, the questionnaire was long and might have discouraged dental practitioners from completing it and hence lowered the response rate (Edwards et al., 2007). However, this was done in order for the survey to be comprehensive. Moreover, previous similar studies had comparable sample sizes (Kilpatrick et al, 1999; Manea et al, 2007; Al-Habsi et al, 2009; Habib, 2012).

It was also noted that a large percentage of KSA respondents in this study were academics, so participants in this study may not be representative of the total population of dentists working in Saudi Arabia, and since no published data on the demographic characteristics of dentists living in Saudi Arabia is known to the authors; demographics in this study could not be compared. Knowledge in child protection in this study might not represent knowledge of dental practitioner working in Saudi Arabia, and thus knowledge in CAN might even be less than the results provided in this study. Similarly, the UK sample did not seem to represent dentists in the UK, most importantly due to the high

proportion of dentists working in private practices in this sample while very few worked for the NHS. Whereas several studies on child abuse in dentistry have already been done in the UK, none were conducted on dentists working in Saudi Arabia previous to this research. Nevertheless, results of this research are in agreement with previous studies which suggest that there is a deficiency in child protection training in both groups. Dental practitioners find the topic of safeguarding children challenging in the dental practice and lack the confidence in their own capabilities to recognize and make a report even with previous training; additionally, a gap still exists between knowledge in child protection protocols and procedures and actual reporting abuse cases. Moreover, training was an important predictor for knowledge, attitudes and experience with child abuse and neglect, nevertheless other variables such as age, gender, years of experience, specialty and last degree obtained were also predictors in this study. It is also essential to note that there are both legal and social variances between the two countries compared in this study which are beyond the scope of this research. Although these variances most likely also affect attitudes of dental practitioners towards CAN, however, this study has no authority over legal differences between countries, although, through training and education, an increase in awareness can be achieved thus transforming such social views. And since lack of training is more evident in the Saudi group, additionally the importance of training as a main predictor in this study; an introductory web-based child protection training program was designed as an intervention for the Saudi Arabian group in hopes to initially increase awareness about the important role dentists play in safeguarding children.

2.7 CONCLUSION

This study has established levels of knowledge amongst dental practitioners and identified a need for training amongst practitioners in KSA. The next study will describe the development and testing of a training program in CAN for Dental Practitioners in KSA.

3. EFFECTIVENESS OF A WEB-BASED CHILD PROTECTION TRAINING PROGRAM DESIGNED FOR DENTAL PRACTITIONERS

This study comprised a pre- post-test design evaluation of an online training package in child protection for dental practitioners.

3.1 BACKGROUND

Based on the previous study, only 4 (3.3 per cent) participants from the Saudi Arabian group had some form of training in child protection. In order to reach a large number of dental practitioners working in Saudi Arabia, an online training program in basic awareness in child protection was developed to increase their awareness and knowledge. This intervention was planned to evaluate the effectiveness of the training program on dental practitioners, by assessing knowledge and attitudes at baseline and after completing the training modules; rate the program as well as determine information retention by assessing the effect it has on participants one month after completion.

3.2 PARTICIPANTS AND METHODS

The participants of this study were dental practitioners working in Saudi Arabia who are registered with the Saudi Dental Society (SDS). The Saudi Dental Society was contacted and permission was granted to send invitation e-mails to their members. Participants were invited to take part in the child protection training program by an e-mail sent via the SDS to all its members. The invitation e-mail (cover letter) explains the purpose of the research (Appendix 6.10- Page

263); it includes an information sheet (Appendix 6.9- Page 261) and the link to the online training program. E-mails were sent via the SDS on the 28th June 2013 and one reminder e-mail was sent to all members of the SDS on the 1st of August 2013. The training program was available for participants from the end of June to the end of September 2013. Unfortunately, timing was not optimal for dentists living in Saudi Arabia since these months represent summer/Ramadan holiday in the country, however, due to restricted time available for the researcher, the study had to be conducted as soon as the online material was ready for testing. A four hours continuing professional development certificate from King's College London was used to motivate individuals to participate in the study (Appendix 6.16- Page 276).

3.3 TRAINING PROGRAM FORMAT

The training program was designed as online learning for easy access and self-pace. Users who live all over the country can access the course material at any time convenient to them. Dental practitioners are able to fit this learning material in their individual schedules, enabling them to access it and complete each module on their own time through the option of logging off and back on again. An online format was also used to overcome the challenges of accessing a wide number of dental practitioners living in Saudi Arabia, especially since this study was being developed and conducted from the UK. All contents of the training package were delivered in the English language since all dental and medical training in Saudi Arabia is provided in English.

3.4 DEVELOPMENT OF TRAINING PROGRAM CONTENT

The basic awareness training program for child protection was especially designed for dental practitioners working in Saudi Arabia. The content provides the reader with an overall view of different aspects of CAN. The amount of time taken by the user to complete the program was taken into account while planning the content, so as not to exceed 3 to 4 hours. Users might lose interest in the training program if it was too long.

Material for the online child protection training program was designed on the basis of information gathered from previous similar training programs in child abuse and neglect (CAN) and information gathered from the National Family Safety Program to cater for dental practitioners living in Saudi Arabia (The Saudi National Family Safety Program, 2011). The researcher registered for several online child protection training programs to become familiar with different online training formats, layouts and content such as:

- Child Abuse and Neglect: Implications for the Dental Professional Dr. Stephen A. Jessee and Amos S. Deinard at http://www.dentalcare.com/en-US/dental-education/continuing-education/ce49/ce49.aspx

- NHS West Midlands Safeguarding Children e-learning West Midlands Workforce Deanery at http://westmidlandssafeguarding.westmidlands.nhs.uk

- SMART online training by the Australian Childhood Foundation by the Australian Childhood Foundation in partnership with the Child Abuse Prevention Research Australia and the Indigenous Health Unit at Monash University,

- An online Training module from Virginia Institute for Social Services Training Activities (VISSTA): Child abuse and neglect: recognizing, reporting and responding for educators.

- Child Abuse Mandated Reporter General Training and Child Abuse Mandated Reporter Medical Training by the California Department of Social Services.

The researcher also examined resources; such as articles (Kempe et al., 1962; Becker et al., 1978; Wright & Thornton, 1983; Needleman, 1986; Schmitt, 1986; Da Fonseca et al., 1992; Welbury & Murphy, 1998b&c; Tsang & Sweet, 1999; Naidoo, 2000; Hibbard & Sanders, 2004; Cairns et al., 2005b; Kellogg, 2005; Harris et al., 2007; Leeners et al., 2007; Harris et al., 2009a; Nuzzolese et al., 2009; Asnes et al., 2010; Balmer et al., 2010; Sujatha et al., 2010; Hinchliffe, 2011), manuals and online power point presentations that addressed this subject from a dental practitioner's point of view for example;

- The Management of Abuse: A Resource Manual for the Dental Team by the Royal College of General Practitioners (RCGP) and the National Society for the Prevention of Cruelty to Children (NSPCC) (Sinha et al., 2005)

- Child Protection and the Dental Team: an introduction to safeguarding children in dental practice (Harris et al., 2006),

- Safeguarding children and young people: A toolkit for general practice (Royal College of General Practitioners, 2009).

- What to do if you're worried a child is being abused by the Department of Education in the UK at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/190605/DFES-04319-2006-ChildAbuse_Summary.pdf,

- Guideline on Oral and Dental Aspects of Child Abuse and Neglect by the American Academy of Pediatrics Committee on Child Abuse and Neglect and the American Academy of Pediatric Dentistry (American Academy of Pediatric Dentistry, 2005).

- Children in Wales Plant yng Nghymru and Wales deanery Child Protection Level 2 training for the dental team at http://www.walesdeanery.org/images/stories/Files/Documents/dental/CPD/resources/cp-handouts.pdf,

- CORE-INFO: Oral injuries and bites on children by the NSPCC and Cardiff Child Protection Systematic Reviews at http://www.nspcc.org.uk/Inform/publications/downloads/oralinjuriesandbites_wdf48007.pdf,

- CORE- INFO: Bruises on children by the NSPCC and Cardiff Child Protection Systematic Reviews at http://www.core-info.cardiff.ac.uk/leaflets/nspcc-leaflet-available-to-download-bruises-on-children.

- CARING 4 kids: Recognizing and reporting child abuse and neglect by Sally S. Martin, Jackie Reilly, and Crystal E. Swank from the Healthy Child Care Nevada Project and the University of Nevada Cooperative Extension in association with the Community Integrated Services System (CISS) at http://imedia.unr.edu/cooperative_extension/RecognizingChildAbuse.asx

- P.A.N.D.A (Prevent Abuse and Neglect through Dental Awareness) by a public-private coalition of Delta Dental of Missouri and the Missouri Bureau of Dental Health first developed this program in 1992.However; the full

implementation was done in 2000 by the Arkansas Department of Health and Human Services.

- ‘Safeguarding Children and Young people: roles and competences for health care staff’ is a document published by the Royal College of Paediatrics and Child Health in 2010 in the UK. This document recommended six levels of competences in safeguarding children for different groups of health care staff (http://www.rcoa.ac.uk/system/files/PUB-Safeguarding-Children_0.pdf). Level two included all clinical staff having any contact with children, young people and/or parents/carers, and among those were dental practitioners. Core competences for level 2 were taken in consideration upon planning the outline of the training program:

• Developing professional and clinical knowledge in identifying signs of child abuse or neglect.

• Ability to act effectively in case of a suspected child abuse or neglect case, and give support for children.

• Identifying possible impacts a parent’s or a care giver’s physical, emotional and mental health could have on the wellbeing of a child or young person.

• Understanding the roles and responsibilities of the practitioner as well as his/her colleagues.

• Knowledge in referral procedures in case child protection concern is suspected.

• Appropriate documentation and record keeping in case of child protection concerns in order to properly notify relevant staff members and child protection agencies to appropriately assess the case.

• Act in accordance with local legislations including the UN Convention on the Rights of the Child and Human Rights Act.

Eight main headings were listed to be used in the training program; followed by the content of the material gathered to be used under each heading creating eight modules relevant to the title; child protection training program for dental professionals.

Ethical approval was obtained for this study from the Biomedical Sciences, Dentistry, Medicine and Natural & Mathematical Sciences Research Ethics Subcommittee (BDM) of King's College London Research Ethics Committee (BDM/12/13-16 A web based training programme in safeguarding children for dental practitioners in Saudi Arabia) after having reviewed the methodology of this research and content of the training program (Appendix 6.7- Page 253).

The training course was later tested for content validity. A power point presentation of the training program was presented at a continuing education course given at the British Dental Association on child protection. The content received good reviews. Few adjustments in content were made to cater for an audience living in Saudi Arabia. The PowerPoint presentation (Appendix 6.15- Page 275) was later transformed into an online training program and was pilot tested on a group of three Saudi dental practitioners.

The training program starts with a mission statement and content listing; followed by the first module; an introduction comprising five sections: the importance of health care professionals' role in safeguarding children, childrens' basic needs, prevalence of CAN, definitions and types of abuse. The second

module highlights risk factors to CAN; it consisted of five sections: an introduction, child characteristics, caregiver and family characteristics, community characteristics, society and culture characteristics. The third module comprises the role of the dental team, it consists of five parts: responsibilities of the dental team, importance of the dentist's role in detecting CAN, Kemp's model of attitudes to abuse, dentists' attitudes to CAN in Saudi Arabia and barriers to reporting suspected cases of CAN. Module four highlights general indications of CAN and consists of five parts: barriers that prevent a child from disclosure, general indicators of child maltreatment, suspicious factors in the presentation of a child/parent relationship, behaviour characteristics of abuse in the child, as well as behaviour characteristics of abuse in a parent. Module five consists of signs and symptoms of CAN and highlights seven parts: possible indications of child physical abuse, differential diagnosis of physical abuse, oral and dental aspects of physical abuse, possible indications of child emotional abuse, possible indications of child sexual abuse, possible indications of child neglect, and finally possible indications and consequences of dental neglect. Module six is titled the assessment of the child. This module consists of four parts: an introduction, history taking, a systemic approach to assessment of the child including bite mark assessment. Module seven is titled management of CAN cases. This module contains six sections: it describes how the dental team should react to a disclosure of abuse by a child, documentation of suspected cases of CAN, providing emergency treatment, what to do if worried about a child, child protection centres in Saudi Arabia and the management of a child with previous history of abuse. Module eight is about child protection policy in dental practice. It consists of three parts: an introduction, followed by what a

child protection policy should include and safeguarding children in the dental clinic. Each module is followed by self-assessment questions. Participants are not able to move on to the next module until they have successfully completed the assessment part of the previous one.

3.5 DEVELOPMENT OF THE TRAINING PROGRAM QUESTIONNAIRE

Eight sets of questions were developed; each set corresponds to the subject material discussed in each module. All the questions were in multiple choice formats; the user was instructed to either choose only one answer in some questions and more than one answer in others. To compare between pre and post training knowledge, the questions were identical except for the demographics; present only in the first part of the pre-training questions and included age, gender, nationality, professional experience, academic degree, specialty, place of work, hours per week practicing dentistry and the number of children seen in the clinic. There were five questions related to the content of module one; the introduction, five questions for module two; Risk Factors, two questions for module three; Role of the Dental Team, two questions for module four; Indicators of CAN, twelve questions for module five; Signs and symptoms of CAN, two questions for module six; Assessment of the Child; six questions for module seven; Management of CAN cases which included two questions about their willingness to report suspected cases of CAN and to whom they prefer to report and two final questions for module eight; child protection policy in the dental practice (Appendix 6.11-Page 264).

3.6 DEVELOPMENT OF THE ONE MONTH POST-TRAINING SURVEY

After one month of having completed the training program, an e-mail invitation (Appendix 6.13-Page 254) to complete a short survey (11 items) was sent to participants using e-mails they initially registered with. This survey assesses if the child protection training program had an effect on participants' dental practices within that month, if it had any effect on their attitudes and if they suspected or reported CAN. A link to the survey platform (SurveyMonkey©) was provided in the e-mail. The questionnaire included selecting answers; yes, no, non-applicable. The last question asks if the participant feels more confident about dealing with child abuse and neglect. The replies included the following: Not at all more confident, slightly more confident and a lot more confident (Appendix 6.14- Page 274).

3.7 DEVELOPMENT OF THE ONLINE PROGRAM

The training program was initially provided in text designed in power point presentation form. Text was sent for proof reading to correct any grammatical mistakes, followed by creation of a voice over; hence content incorporated both text and audio files. These files were later transformed by IT technicians into a web-based training program. "GoDaddy.com" domain and website builder was used to create the program. The domain name "candentist" was chosen since it was easy to spell and remember; moreover it was relevant to the title of the project. The online training program could be accessed by the following link: www.candentist.com . The home page included the title and a photograph of a dentist and a child patient in the dental office. Program objectives as well as

information on how to use the training package, and the amount of time needed to finish the training course were stated. The information sheet was also included. Anonymity and confidentiality were stated, and the voluntary nature of this research was also stated.

To access the training modules; the user had to register by entering a username and password. The user was not allowed to log off and on again to continue the training package without his or her password and username. A pre-training questionnaire was administered before accessing the first module. Each module was later followed by questions relevant to the content of the module, which were identical to the pre-training questionnaire. Pre-training and post-training answers are compared to assess the immediate effectiveness of the training package. An eight item post training survey that asks participants to rate the training program follows including two questions that ask participants to rate their own knowledge and attitude towards child protection after completing the course. The survey ends with a comment box (Appendix 6.12- Page 271).

The researcher was able to access participants' answers by entering a username and password in a box in a separate link; 'www.candentist.com/admin'. E-mails provided by participants while registering in the program were linked to their responses, enabling the researcher to send e-mails to all participants who completed the training package. This e-mail comprised a thank you note and asked participants to provide their names as they wish it to appear on their certificates of completion. The admin site was accessed on a daily bases by the researcher from June to September 2013 to enter data of participants who completed both pre and post training questions.

Data was entered manually into the SPSS file for analysis and comparison between pre and post training questions. The date of completing the training package was noted for each participant to enable the researcher to send invitation e-mails to each participant to join the one month post-training survey.

The data was analysed as follows:

1. Descriptive data for all demographic characteristics of the participants.

2. The proportion of participants who completed the training was taken as a measure of the acceptability of the training to participants.

3. Mean knowledge scores for all participants are calculated at Time 1 (pre intervention) and Time 2 (post intervention) and are compared using the Wilcoxon Signed Rank Test. Further analyses look at knowledge within particular domains.

4. Descriptive data for post training questionnaire answers that assess the training program and comments by participants were documented.

5. Descriptive data of the answers to the one month post-training questionnaire.

3.8 RESULTS

The present findings are results of a comparison between a pre and post training survey submitted to participants who completed the online child protection training program. The study aimed to compare dental practitioners' knowledge in child protection before and after taking the online training program, as well as assess and rate the program and explore the effect it had on the dental practice one month after completing it.

The number of participants who registered in the online training program following an email invitation from the SDS to all its members was 203 participants; however, a total of 82 participants (40.4 per cent) completed the training package (pre training questionnaire, 8 modules including post training questionnaire and a survey rating the program).

Participants' responses were obtained from the admin web-page, and were transferred into an SPSS20 file. The data was explored via descriptive statistics followed by Wilcoxon Signed Rank Test to compare participants' responses before and after taking part in the training package to test the hypothesis.

The null hypothesis (H0): There is no difference in pre- and post- training knowledge

The alternative hypothesis (H1): There is a difference in pre- and post-training knowledge.

3.8.1 Sample characteristics

The sample consisted of 82 participants who completed the training package, 45.1 per cent (n = 37) were male and 54.9 per cent (n = 45) were female. There were 56.1 per cent (n = 46) Saudi nationals and 37.8 per cent (n = 31) other nationals. Table 3.1 describes characteristics of participants in this study. Hours of dental practice varied between participants, it ranged for 3 hours to 63 hours with the highest number of participants 18.0 per cent (n = 15) working 40 hours per week followed by 17.1 per cent (n =14) working 45 hours per week.

Table 3.1: Sample Characteristics

Characteristics	Sample	(n =82) %
Gender	Male	(37) 45.1%
	Female	(45) 54.9%
Nationality	Saudi	(46) 56.1%
	Non-Saudi	(31) 37.8%
	Missing	(5) 6.1%
Age range	30 years or less	(52) 63.4%
	31-40 years	(18) 22.0%
	41-50 years	(10) 12.2%
	51-60 years	(2) 2.4%
Highest degree obtained	Bachelor	(44) 53.7%
	Masters	(20) 24.4%
	PhD	(3) 3.7%
	Dental Students	(12) 14.6%
	Other	(2) 2.4%
	Missing	(1) 1.2%
Dental specialties	General dentistry	(45) 54.9%
	Paediatric dentistry	(7) 8.5%
	Restorative dentistry	(3) 3.7%
	Orthodontics	(3) 3.7%
	Prosthodontics	(3) 3.7%
	Other	(9) 10.9%
	Missing	(12) 14.6%
Place of work	University	(47) 57.3%
	Public hospital	(19) 23.2%
	Private dental clinic	(12) 14.6%
	Private hospitals and medical polyclinic	(8) 9.8%
	Other	(1) 1.2%
	Missing	(13) 15.9%
How long practicing dentistry	1-5 years	(48) 58.5%
	6-10 years	(14) 17.1%
	11-20 years	(15) 18.3%
	21-30 years	(4) 4.9%
	Missing	(1) 1.2%
How many children seen/week	None	(14) 17.1%
	Less than 10 children	(39) 47.6%
	10-20 children	(17) 20.7%
	21-40 children	(6) 7.3%
	More than 40	(4) 4.9%
	Missing	(2) 2.4%

3.8.2 Comparison of knowledge scores pre- and post- training

Participants were asked to answer five multiple questions related to module one which covers the importance of health care professionals' role in safeguarding children, Children's basic needs, the prevalence of child abuse and neglect in Saudi Arabia, definitions of abuse and each type of child abuse and neglect. The total score was 5, and the answers were analyzed as correct or incorrect. Only 9.8 per cent (n = 8) scored 5 in the pre-training scores while 24.4 per cent (n = 20) did in the post-training questions.

The total score for module two (CAN risk factors) was five; only 3.7 per cent (n = 3) achieved the total score in the pre-training questions while 25.6 per cent (n = 21) did in the post-training questions.

Participants were asked to answer two questions in module three (role of the dental team), but only one question was scored as correct or incorrect: "The key responsibilities of the dentist with regard to child abuse are..?" 53.7 per cent (n = 44) of the sample scored correct in the pre-training questions and 91.5 per cent (n = 75) did in the post-training set. In the second question, participants were asked to identify factors that may act as barriers in the decisions towards reporting suspected cases of child abuse and neglect (table 3.2).

Table 3.2: Factors that may sometimes act as barriers in the decision towards reporting suspected cases of child abuse

Barriers	Pre-training (n) %	Post-training (n) %
Lack of certainty about diagnosis	(59) 72.0%	(79) 96.3%
Lack of knowledge in referral procedures of child abuse and neglect	(67) 81.7%	(79) 96.3%
Fear of unknown consequences to the child	(60) 73.2%	(79) 96.3%
Concerns about confidentiality	(44) 53.7%	(74) 90.2%
Dentists have no legal obligation to report abuse	(30) 36.6%	(71) 86.6%
Reporting child abuse is against my social norms	(24) 29.3%	(70) 85.4%

Participants were asked to answer two questions in module four (indicators of CAN), and only 2.4 per cent (n = 2) of the sample got the correct answers in the pre-training set while 28.0 per cent (n = 23) did in the post-training set.

As for module five (signs and symptoms of CAN), it comprised 12 questions. In the pre-training set, the highest number of participants 20.7 per cent (n = 17) scored 4 out of 12 while the highest number of participants with the highest score was 17.1 per cent (n = 14), who scored 6 out of 12 in the post-training questions.

Participants were asked to answer two questions in module six (assessment of the child). In the pre-training set, 52.4 per cent (n = 43) scored 2 out of 2 while 86.6 per cent (n = 71) did in the post-training set.

Participants were asked to answer six questions in module seven (management of CAN cases), but four questions were scored as correct or incorrect:

“Children often make things up - e.g. that they have been abused – so we must not take what they say seriously?”, “If you have a concern about a child it is a good idea to discuss this with everyone at work over a coffee?”, “If a child/young person is telling you about abuse. You should NOT:” and “With questionable signs and injuries observed during a routine appointment, it is necessary to _____”. Only 3.7 per cent (n = 3) of the sample scored 4/4 in the pre-training questions while 25.6 per cent (n = 21) scored 4/4 in the post-training set. As for participants’ answers to question 5; “Would you be willing to report a suspected case of child abuse?” 87.8 per cent (n = 72) answered yes in the pre-training set as compared to 96.3 per cent (n = 79) who said yes in the

post-training set of questions. The final question in this module was who do you prefer to discuss or refer cases of suspected child abuse? The answers to this question varied. In the pre-training set; 25.6 per cent (n = 21) preferred to discuss the case with a colleague, 50 per cent (n = 41) chose a senior staff, 28.0 per cent (n = 23) chose the caregiver, 67.1 per cent (n = 55) chose social services and only 22.0 per cent (n = 18) preferred the police. In the post-training answers; 52.4 per cent (n = 43) preferred to discuss the case with a colleague, 65.9 per cent (n = 54) preferred a senior staff, 20.7 per cent (n = 17) chose the caregiver, 80.5 per cent (n = 66) chose social services and 43.9 per cent (n = 36) would prefer notifying the police.

Module eight (child protection policy in the dental practice) comprised two questions only, and 25.6 per cent (n = 21) had the total score in the pre-training set while 93.9 per cent (n = 77) did in the post-training set. There was a significant difference in all the module total scores between the pre- and post-training surveys. Table 3.3 compares distribution of scores before and after taking part in the online training course using the statistical test, Wilcoxon Signed Rank Test. The table shows significant differences in all module scores ($p < 0.001$).

Table 3.3: Comparison of pre and post-training scores

Module	Pre-training scores	Post-training scores	Wilcoxon signed rank test
1. Introduction			
Mean	2.85	3.82	
Median	3	4	<0.001
Mode	2	4	
SD	1.238	1.044	
Range	5	5	
2. Risk Factors			
Mean	3.01	3.99	
Median	3	4	<0.001
Mode	2	4	
SD	0.962	0.798	
Range	4	4	
Missing	0	1	
3. Role of Dental Team			
Mean	0.54	0.91	
Median	1	1	<0.001
Mode	1	1	
SD	0.502	0.281	
Range	1	1	
4. Indicators of CAN			
Mean	0.62	1.27	
Median	1	1	<0.001
Mode	1	1	
SD	0.536	0.473	
Range	2	2	
5. S & S of CAN			
Mean	4.59	6.67	
Median	4	6	<0.001
Mode	4	6	
SD	2.267	2.557	
Range	11	10	
Missing	3	4	
6. Child Assessment			
Mean	1.45	1.85	
Median	2	2	<0.001
Mode	2	2	
SD	0.632	0.389	
Range	2	2	
7. Management of CAN			
Mean	2.15	2.9	
Median	2	3	<0.001
Mode	2	3	
SD	0.91	0.846	
Range	4	4	
Missing	1	1	
8. Child Protection Policy			
Mean	1	1.94	
Median	1	2	<0.001
Mode	1	2	
SD	0.72	0.241	
Range	2	1	

3.8.3 Rating the training program

Participants were asked to answer nine questions after completing the whole training program to rate the online training course and assess their attitudes towards child protection;

“How would you rate this training program in general?” 47.6 per cent (n = 39) of participants rated the program as excellent and 43.9 per cent (n = 36) gave it a very good score.

“Before taking part in this training package, have you ever been on a child protection training program?” Only 11 per cent (n = 9) of participants replied yes.

“Did you find the content of this training program useful for you in your daily practice?” All participants found the program extremely useful.

“In terms of “user friendly” as a web-based training program, how easy or hard was it to go through the content of the program?” 53.7 per cent (n = 44) of participants found it very easy, 39 per cent (n = 32) found it easy and only 7.3 per cent (n = 6) gave it neutral.

“How long did it take for you to finish the training package?” Almost one third of participants 32.9 per cent (n = 27) took 3-4 hours to finish the course, 29.3 per cent (n = 24) took 2-3 hours, 14.6 per cent (n = 12) took 1-2 hours and only 11.0 per cent (n = 9) took less than one hour to finish the whole training package.

“Would you recommend this web-based training program to your colleagues?” The majority of participants 84.1 per cent (n = 69) would highly recommend it,

9.8 per cent (n = 8) might recommend it and 4.9 per cent (n = 4) do not know if they would recommend it.

When asked if the training program increased their knowledge of child protection; 70.7 per cent (n = 58) said yes it has increased their knowledge a lot, 26.8 per cent (n = 22) said yes, it had increased their knowledge a little.

When asked about what learning tool they preferred when learning about CAN; 41.5 per cent (n = 34) of participants preferred a web-based program, followed by video 30.5 per cent (n = 25), then lectures 14.6 per cent (n = 12), then reading material 12.2 per cent (n = 10). Audio was the least chosen; only 1.2 per cent.

When participants were asked what they thought about this sentence; “Dentists’ knowledge about child protection protocols is important for the dental team” the majority of participants 96.3 per cent (n =79) agreed.

The final question was to evaluate participants’ opinions towards the following sentence: “I can confidently recognize signs of abuse in a child” 76.8 per cent (n = 63) agreed and 22.0 per cent (n =18) gave a neutral response. Table 3.4 summarises participants’ replies.

A comment box at the end of the post-training questionnaire was present for participants to express any queries or suggestions related to the program. Here are some of the comments:

“Great job, it is worth the time I spent. May I use some of this material to teach my interns?” “I loved the part of contact numbers in Saudi Arabia, so we can

know who to contact for CAN." "I like the program; it changed my way of thinking." "I am looking forward to seeing more programs like this, Thank you."

Table 3.4 Training program assessment and attitudes of participants towards child protection

Question	Answer	(n=82) %
Before taking part in this training package, have you ever been on a child protection training program?	Yes No	(9) 11.0% (73) 89.0%
How would you rate this training program in general?	Excellent Very good Good Neutral Poor Very poor	(39) 47.6% (36) 43.9% (7) 8.5% 0 0 0
Did you find the content of the training program useful for your daily practice?	Extremely useful Somehow useful Not so useful It was a waste of time	(82) 100% 0 0 0
In terms of user friendly as a web-based training program, how easy or hard was it to go through the content of the program?	Very easy Easy Neutral Difficult Very difficult	(44) 53.7% (32) 39.0% (6) 7.3% 0 0
How long did it take for you to finish the training package?	Less than 1 hour 1-2 hours 2-3 hours 3-4 hours More than 4 hours	(9) 11.0% (12) 14.6% (24) 29.3% (27) 32.9% (10) 12.2%
Would you recommend this web-based training program to your colleagues?	I would highly recommend it I might recommend it Don't know I would not recommend it Missing	(69) 84.1% (8) 9.8% (4) 4.9% 0 (1) 1.2%
Has the training program increased your knowledge in child protection?	Yes, it has a lot Yes, it has a little No, it did not add much to my knowledge Missing	(58) 70.7% (22) 26.8% (1) 1.2% (1) 1.2%
What tool do you prefer when learning about child abuse and neglect?	Lectures Web-based training programs Reading material Video Audio	(12) 14.6% (34) 41.5% (10) 12.2% (25) 30.5% (1) 1.2%
Dentists' knowledge about child protection protocols is important for the dental team	Agree Neutral Disagree	(79) 96.3% (2) 2.4% 0
I can confidently recognize signs of abuse in a child	Agree Neutral Disagree	(63) 76.8% (18) 22.0% 0

3.8.4 One month post-training survey

The response rate for the one month post training survey was 75.6 per cent (n = 62) of the sample that completed the training program, and all the questions in the survey were answered.

Since the training program, 21.0 per cent (n = 13) of this sample adopted or will adopt a written child protection policy in their practice, 40.3 per cent (n = 25) will not and 38.7 per cent (n = 24) thought the question was non-applicable. Around one quarter 25.8 per cent (n = 16) of participants are arranging or have arranged child protection training for one or more of the team members at work, 46.8 per cent (n = 29) answered no and 27.4 per cent (n = 17) thought the question was non-applicable. As for identifying or have identified a staff member to lead on child protection since completing the program; 29.0 per cent (n = 18) answered yes, 41.9 per cent (n = 26) answered no and 29.0 per cent (n = 18) chose non-applicable. As for their replies to the following sentence; “no changes were done in regards to child protection” Around half the sample answered yes 51.6 per cent (n = 32). In this survey, the majority of participants 85.5 per cent (n = 53) attended or will attend more courses and workshops in child protection since joining the program. Almost all participants 93.5 per cent (n = 58) raised awareness in the dental practice about the importance of child protection since taking up the training course. Almost all participants 96.8 per cent (n = 60) have also been more aware of child abuse and neglect signs during their daily dental practice. As for recognizing a child abuse and neglect case since completing the training program; 58.1 per cent (n = 36) replied yes. And 77.4 per cent (n = 48) knew who to contact to make a report, while 27.4 per cent (n = 17) had

made a report of a child abuse and neglect case since taking the program. As for how confident participants are about dealing with child abuse and neglect since completing the program; 58.2 per cent (n = 36) felt slightly more confident, 40.3 per cent (n = 25) were a lot more confident and only 1.6 per cent (n = 1) did not at all feel confident.

3.9 DISCUSSION

The results of the previous study revealed that less than a handful of dental practitioners from the Saudi Arabian sample had attended some sort of formal training in child protection. In an effort to increase awareness in safeguarding children among dental practitioners working in Saudi Arabia, an intervention in the form of a training program was developed and tested on a sample of dental practitioners working in KSA.

The testing of the program was conducted through the following:

1. Comparing participants' knowledge before and after going through the modules of the training package via a questionnaire.

2. A post-training survey for dental practitioners to rate the training program and assess amount of previous training and confidence participants have after completing the training program.

3. A one month post-training survey to assess the influence the training program had on participants' attitudes as well as the level of awareness about child abuse cases in the dental practice.

3.9.1 Sample characteristics

The initial number of individuals who registered in the online training program was 203; but only 82 participants completed the training program up to the time of analysis. Participants who completed the course represented 40.4 per cent of all initial individuals registered and this could be attributed to several reasons:

The study was conducted during the summer months of June, July and August 2013 when people are more likely to go on holiday. It is not a surprise that some individuals could have registered for the program expecting to complete it then travelled for holiday; however, the time provided for individuals to complete the course was extended from 6 weeks to 8 weeks after the initial e-mail invitation, thus giving more time for participants to complete it.

The sample was invited to participate in this study by an e-mail invitation with the link to the training program. The e-mail was sent by the Saudi Dental Society to all its members at the end of June 2013. One reminder e-mail later followed in August. In this period, dentists could have forgotten about the training program. The ideal method recommended by Dillman in 2007 is to send two reminder e-mails with two week intervals after sending out the first invitation e-mail. However, in this study, due to a delay in reply from the Saudi Dental Society because of summer/Ramadan holiday in Saudi Arabia at the time of starting this research, only one reminder e-mail was sent later than initially intended, and this also might contribute to a low response rate.

The length of the training program may have contributed to drop out. It is understandable that some individuals who initially registered in the online training program could have been put off from completing it due to the number of modules (8 modules) as well as having to complete several assessment questions. In this study, around one third of participants (33.0 per cent) completed the whole training program in 3-4 hours. Nevertheless, the length of the training program was clearly stated in the initial invitation letter to join the study.

The training program was designed as an e-learning format for easy access and to be self-paced. The user would be able to access it and complete each module depending on each individual's pace and schedule through the option of logging off and back on again to continue the course. However, participants need good internet connection, a computer, laptop, tablet or a smart phone as well as computer skills to be able to access it. This might have prevented some individuals who were lacking the above and those who are not accustomed to using the internet as a learning tool from joining. Moreover, to access the training program, the user had to enter his/her e-mail address and password. There was no way of retrieving the password in case it was forgotten, that might have also stopped some users from logging back on and completing the program.

The low response rate may indicate a lack of interest in the subject. It is not surprising that as a consequence of lack of awareness of the role dental practitioners have in child protection, many dental practitioners might have initially thought that the dental team has no commitment towards child protection, and might have thought that such interest is only confined to specialities that specialize in dealing with children; for example, sociologists, psychiatrists and physicians. It is possible that participants may have had greater interest in continuing education and professional development in this topic than non-responders. As a consequence, paediatric dentists were the highest among other specialties to have completed the training program in this study. Moreover; dental practitioners from other specialities may find this course irrelevant to their specialties, particularly if they regularly treat adult patients,

unaware that such training is vital for all health care professionals who are directly or indirectly dealing with children.

Lack of awareness of the important role dental practitioners have on child protection can be due to the lack of previous training as was apparent from both surveys; where only 3.5 per cent had former training in child protection in the first survey and 11 per cent did in the current one.

While the response rate observed in this study whilst apparently low (82 of 203), the obtained sample size exceeded the number required to detect a medium effect size (Norman et al, 2012) and in that sense was deemed fit for purpose. Moreover, previous similar studies have used smaller sample sizes (Welbury et al., 2001; Harmer-Beem, 2005; Soldani et al., 2008) as described in table 1.4.

This sample may not necessarily represent the general population of dental practitioners living in Saudi Arabia, due to a noticeably high percentage of dental practitioners working in Universities in this sample. This might suggest that this sample is more likely to access a wider range of CPD seminars and programs compared to other dental practitioners living in KSA; consequently they could have obtained more initial knowledge in the important role dentists play in child protection.

The male to female ratio in this study was almost 1:1, 55 per cent of this sample were females. This could indicate similar interests between genders in the subject of safeguarding children. However, previous studies have shown that the majority of dental practitioners who responded to similar research were male (Welbury et al., 2001, Harris et al., 2011).

The percentage of non-Saudi participants in this study was more than one third of the sample; this could be attributed to the high percentage of non-Saudi nationals working as dental professionals in KSA as compared to Saudi dentist. The latest report on the statistics of Saudi dentists versus non-Saudi dental practitioners working in KSA in 2009 can be obtained from the Ministry of Health in Saudi Arabia's website; the total number of dentists working in the government sector was 978; where 67.0 per cent (n = 656) of dentists were Saudi and 33.0 per cent (n = 322) were non-Saudis. As for dentists working for the ministry of health; the total number of dentists was 1218, of whom 35.0 per cent (n = 428) were Saudi dentists and the majority 65.0 per cent were non-Saudi dentists. In the private sector; the number of dentists working in private hospitals and polyclinics was 3826 dentists; Saudi dentists represented only 4.0 per cent (n =146) and 96.0 per cent (n = 3680) were from other nationalities.

(http://www.moh.gov.sa/en/Ministry/Statistics/book/Pages/default.aspx).

Most participants in this study were 30 years or less compared to other age groups and they were either dental students (14.6 per cent) or new graduates. As a result, many participants were GDPs and had lower years of experience. This age group can be more inclined to be interested in partaking in a web-based training research in child protection compared to older, more experienced and specialized dental practitioners for several reasons;

Students and newly graduates are more likely to be keen on building their CVs; the four hour continuing professional development education certificate from King's College London is a good incentive for this young age group to be

interested in the program. Furthermore, dental practitioners working in KSA need to register with the Saudi Commission for Health Specialties to obtain a work license, providing that a specific number of hours of continuous education are completed.

A growing awareness among younger age groups in this topic could be observed due to an increase in child abuse cases brought to light by the Saudi media in the last few years, including the active role social media had played, such as Facebook and Twitter. Social media provides a platform for people to discuss such concerns when previously it was considered taboo and socially unacceptable.

Younger age groups may be more inclined to be interested in web-based training programs compared to more conventional methods of training such as lectures and reading material; and this could be one of the reasons why this age group comprised a larger percentage of the sample. Younger age groups are more likely to be familiar with online-teaching methods and online research during their training and career development. On the other hand, dental practitioners of older age groups and longer years of experience might be inclined to think that experience acquired from work can replace the importance of such training.

In a similar study done by Welbury et al. (2001), the average age of participants was 40.3 years and the mean time in practice was 12.3 years and in contrast the majority of the current sample (58.5 per cent) had been practicing dentistry for only 1-5 years.

3.9.2 Comparison of knowledge scores

The results of this study revealed a significant increase in participant's knowledge in CAN after completing the training modules when comparing their answers to their baseline knowledge scores. A significant increase in knowledge was found in all modules covered in the training program. Despite the limitations of the study, such as a small sample size, the high percentage of University faculty and a younger age group, where initial knowledge in child protection is likely to be greater than the average dental practitioner working in KSA, there was still a significant increase in knowledge scores after completing the training program. So, in other settings where we would expect initial knowledge to be low, we can expect benefit from the child protection training program.

Previous studies have shown similar results where an increase in knowledge in child abuse and neglect was observed in health care providers after completing training or accessing material about CAN (Needleman et al., 1995; Welbury et al., 2001; Harmer-Beem, 2005; Soldani et al., 2008; Harris et al., 2011). These studies are comparable to this research due to some similarities. In this study, 97.5 per cent of participants self-reported that the training program increased their knowledge in child protection; similar findings were reported by previous studies (Needleman et al., 1995; Welbury et al., 2001; Harris et al., 2011). Harmer-Beem in 2005 described a significant increase in knowledge about factors contributing to abuse in 25 dental hygienists after attending a training program about abuse. Similarly, there was a significant increase in knowledge about CAN risk factors in this study. Harmer-Beem also reported a significant

increase in knowledge about the ethical and legal responsibilities towards the child (from 32 per cent at baseline to 100 per cent) after completing training. Similarly, this study also shows an increase in knowledge about the responsibilities of dentists with regard to child abuse; correct answers increased from 53.7 per cent at baseline to 91.5 per cent after completing the training program. In this study, a statistical significant improvement was found in all post-training questions related to the dental professionals' roles in assessing the child, signs, symptoms and indicators of CAN as well as management. Similar findings were reported by Harris and colleagues in 2011.

In this study, there was a significant increase in participants' answers to "Would you be willing to report a suspected case of child abuse?" from 87.8 per cent who answered "yes" in the pre-training questions to 96.3 per cent in the post-training set of questions. Similarly, 100 per cent of participants reported in the post-training questionnaire that they would make a report to the correct agency if they suspect abuse, compared to 40 per cent before training (Harmer-Beem, 2005).

3.9.3 Rating the training program

The training program was warmly received by individuals who praised it in the comment box left at the end of the survey. In general, the vast majority of respondents provided positive feedback on all of the questions that rated the program. All participants found the subject and material extremely useful; good ratings were given to the resource's ease of use; there was an increase in

knowledge in child protection; and therefore participants were more likely to recommend the training package to their colleagues or friends in the field. Most participants recognized the important role they had in child protection and felt more confident in recognizing CAN after completing the course. However, a number of recommendations were suggested to improve the course; such as including case studies as examples of CAN that are relevant to dental practice. Similar findings were reported in a study by Welbury et al. in 2001 where the vast majority of responders rated the computer assisted learning program “The Oro-Facial signs of Non-Accidental Injury” very highly based on presentation and content. The program was presented as tutorials or chapters on floppy disks that were sent to participants with a questionnaires asking participants to rate the program and to rate their experience and knowledge after using the program.

3.9.4 One month post-training questionnaire

A one month post training survey was administered to all participants who completed the training program. The questionnaire analysed their attitudes towards dentists’ role in child protection and evaluates the effect the training program has on their daily practice.

The response rate to the one month post-training questionnaire was 75.6 per cent (n = 62) of the sample that completed the initial training program. A good response rate was not a surprise since many participants exhibited interest in the subject during the training program feedback and demonstrated positive

appraisal. The results of this questionnaire revealed that the training program still had a positive impact on many individuals one month after completing it. There is a clear change in attitudes towards safeguarding children in the dental practice; many individuals decided to take action and responsibility towards safeguarding children owing to the training course. One in five dentists adopted or planned to adopt a written child protection policy in their practice due to the program, a study by Harris et al, 2011 stated that 61.0 per cent of participants adopted a written child protection policy. In this study, 38.7 per cent answered “no” because the question was not applicable rather than lack of interest. Some questions implied the need to have an authoritative role in the dental practice in terms of decision making and making changes. They received more “not applicable” answers, and that could be explained by the high proportion of younger age groups, dental students and newly graduates participating in this study whom believe to have less authority in the dental practice. As for the arrangement of child protection training for one or more of the team members at work, around one quarter 25.8 per cent of participants answered yes while 27.4 per cent thought the question was not applicable. As for identifying a staff member to lead on child protection due to the program, 29.0 per cent replied yes while 29.0 per cent thought the question was not applicable. Harris et al. (2011) reported that as a result of using a resource manual on child protection, 54.0 per cent of dental practitioners reported that the practice in which these dental practitioners worked had identified a staff member to lead on child protection.

Almost half of the participants in this study reported that changes were made in regard to child protection in the dental practice in general, and this outcome demonstrates the success and positive effect the course had on participants, despite the fact that some individuals gave negative responses because questions were non-applicable. It is important to note that dental students comprise 14.6 per cent of this sample, they are more likely to provide this answer; moreover, this training program is the first of its kind to be delivered to dental practitioners in Saudi Arabia, and is considered to be an introductory training program in child protection, a more comprehensive training is still required for dentists to be competent and confident in dealing with child abuse and neglect. However, this study demonstrates a clear interest in the subject of safeguarding children among individuals who completed the program, 85.5 per cent (n = 53) attended or are interested in attending more courses in child protection after completing the program.

Since taking up the course, most participants raised awareness in the dental practice about the importance of child protection as well as been more aware themselves of child abuse and neglect signs during their dental practice. It was surprising to see a high percentage of 58.1 per cent of participants who recognized a child abuse and neglect case in the last month since completing the training program and it was equally surprising to find that more than one fourth of participants (27.4 per cent) had made a report of a child abuse and neglect case in the one month that followed completing the training program. Research shows that dental practitioners who have been educated to recognize

signs of child abuse and neglect are five times more likely to make a report than dentists who are not (Kassebaum et al., 1991).

The study also shows that most participants felt more confident about dealing with child abuse and neglect since completing the training program, similarly, a study by Needleman et al., 1995 reported that most dentists and hygienists who either attended Coalition presentations or read Coalition material in child protection had increased awareness and knowledge in CAN and felt more likely to detect CAN as a result. It is important to note though that similar training programs to the one developed in this study are not enough to give dental practitioners all the knowledge needed for safeguarding children. They might give participants a false sense of confidence in dealing with a stressful and complicated issue as CAN. Such short workshops or programs are introductory; they increase awareness about CAN, however, more comprehensive training is required to reach optimal confidence in managing abuse.

Harris et al. (2009b) reported that almost half the number of dentists with previous CAN training made a report after suspecting CAN, this finding may still suggest the presence of a gap between recognizing and reporting abuse; consequently emphasis should be made on pathways of reporting suspected CAN as well as including multiagency training.

3.10 LIMITATIONS

This study was conducted in the summer months of June-September 2013. These are the months in which many individuals go for their holidays and thus

the timing of this research could have had an effect on the sample size. The sample size might have also been affected by the method of learning used in this study; an e-learning based program due to the reasons mentioned earlier, moreover, the password given upon registering in the web-based training program could not be retrieved if it was forgotten during log-in for this study. The demographics of the sample, such as a high percentage of young individuals as well as the high number of faculty who work at Universities may not represent the population of dental practitioners in Saudi Arabia. Also, a more critical appraisal might have been achieved if the number of participants in the pilot group whom tested the training program before releasing it for the main study was larger than three, although, no adverse comments were noted in the main study in regards to the assessment questions. Information retention was also not assessed in this study over a period of time.

3.11 CONCLUSION

The results of this study revealed the success of the online child protection training program in both method of delivery and content. The learning objective of this training program was met; a significant increase in knowledge in child protection among dental practitioners after completing the online training program course was observed. The training program was highly rated by participants who gave positive feedback about their experience while using this method of training as well as the content. A one month post-training survey also showed a positive change in attitudes of dental practitioners and the willingness to increase awareness, influence other staff members in the dental practice and

take positive action when suspecting CAN one month after completing the course.

3.12 RECOMMENDATION AND FUTURE IMPLICATIONS

The site created to test the web-based child protection training program has been transformed to an online training program; www.candentist.com. Two versions of the training program are now available for dental practitioners interested in safeguarding children; one version is developed for dentists in Saudi Arabia and another one for UK dentists. Some modifications were made in the technical part of the training program to make it easier to access, and on the content part of the training modules, for example, three case reports were added to the training program. Thus the program is now made to accommodate a wider range of audience. The UK version is planned to be incorporated into the dental curriculum at King's College London.

4. DISCUSION AND CONCLUSIONS

At the time of the research, the author was unable to locate any published research about knowledge, experience, attitudes and training dental practitioners working in Saudi Arabia had in child protection. Moreover, no CPD training in child protection was available for dental practitioners working in Saudi Arabia.

This dissertation has demonstrated through a self-reported questionnaire survey that there is a need to improve knowledge in signs and symptoms of child abuse and neglect in dental practitioners working in the UK and Saudi Arabia. There is also a persistent need to educate dental practitioners about perceived barriers and fears preventing dentists from reporting abuse, as well as the need to educate them about local protocols and policies in referring suspected abuse cases. Dentists working in Saudi Arabia suspected a larger number of cases of CAN compared to dentists working in the UK, however, dentists in the UK took more positive actions towards suspected abuse cases and had better knowledge in referral procedures. Training in child protection played an important predictor in this study; and although it was limited in the UK group, it was almost non-existent in the Saudi group. Lack of training in child protection could well explain the reason that dental practitioners in the Saudi group did not know of child protection protocols and did not take appropriate measurement in dealing with suspected abuse.

An intervention in the form of an online training package in child protection was developed due to the absence of such training catered for dentists working in

Saudi Arabia. This basic online training program intended to increase awareness about child abuse and neglect by providing information about different types of abuse, signs and symptoms and referral pathways that can be used in Saudi Arabia. The training program was assessed by having dentists working in Saudi Arabia answer surveys, testing their knowledge before and after completing the training package as well as rate the program. There was a significant increase in knowledge in all sections of the training program after completion and the training program was received very well by participants who highly appraised it. Moreover, a short survey one month after completing the training was administered to assess the effect the training had on dentists' attitudes about CAN in the dental setting. The results of this survey showed that dentists were interested in the subject; some participants helped increase awareness in the dental practice and some participants felt more responsible in responding to child abuse.

4.1 RECOMMENDATIONS AND FUTURE IMPLICATIONS

Clearly, dental practitioners in Saudi Arabia are limited in their knowledge about their important role in child protection, and one of the main reasons for this could be the absence of relevant training. The online training program developed for dentists in this research has been made available for dentists living in Saudi Arabia and should be recommended to dental students as well. It will provide the dental team with basic awareness and some important information about how to assess and detect child abuse and refer suspected cases. This child protection training program should pave the way for other

programs in the future. Comprehensive multi-agency training programs are recommended to eliminate fears dentists might have about being inadequate in dealing with such sensitive circumstances, and close the gap between dental practitioners and child protection agencies. Undergraduate and postgraduate training in child protection is recommended. Most importantly, the dental team should be aware of local policies in child protection and raise awareness about the issue within the dental team. They should establish communication between members of the dental team and other agencies that deal with child protection, as well as paediatricians and nurses for support and follow up. Moreover, communication between dental professionals themselves is essential to develop a support system.

Further research should be made assessing knowledge, experience, attitudes and training in child protection amongst dentists working in Saudi Arabia. Especially since the Saudi sample in the first study is likely to be more knowledgeable and aware about CAN than the dental population in Saudi Arabia. Such information might help in future policies and guidance development and help provide effective training.

Future research should also include determinates of the incidence and prevalence of child abuse and neglect in Saudi Arabia to assess the extent of the problem, which might help in development of legislations on child abuse and neglect in Saudi Arabia.

The media played an important role in increasing awareness about child abuse and neglect in Saudi Arabia, it is recommended that media continues to play that important role.

4.2 CONCLUSION

The conclusions of the present thesis are as follow:

1. Dental practitioners who had previous training in child protection have more knowledge in identifying forms of child abuse and neglect compared to dentists with no previous training.
2. Female dentists had better knowledge about risk factors of CAN than male dentists.
3. A proportion of dentists working in the UK have a limited understanding of the risk factors of CAN.
4. Specialized dental practitioners had better knowledge of the common manifestations of physical abuse.
5. Dental practitioners with previous training in child protection had better knowledge of the observed indicators of CAN.
6. GDPs were known to see the highest number of children with neglected dentition in their practice.
7. Dentists working in the UK identified more cases of children with neglected dentition than dentists working in Saudi Arabia did.
8. Dentists working in Saudi Arabia suspected a higher number of cases of abuse than dentists working in the UK did.
9. Dentists working in the UK were more likely to take positive action after suspecting CAN compared to dentists in the Saudi group.
10. Dental practitioners are reluctant to report suspected CAN cases. A gap exists between suspecting and reporting abuse in both groups.

11. Perceived barriers that prevent dentists from reporting CAN were more evident among the Saudi group.
12. Training in child protection is almost non-existent among dentists working in Saudi Arabia.
13. Training in child protection is deficient in dentists working in the UK (69.64 per cent).
14. The majority of dental practitioners welcome training in child protection.
15. The majority of dental practitioners agree that knowledge about child protection protocols is important.
16. Lack of confidence in recognizing signs of CAN was reported by both UK and Saudi dentists.
17. A significant increase in dentists' knowledge in CAN after completing the training program was reported when comparing their answers to their baseline knowledge scores.
18. Positive feedback and good appraisals were given by dentists upon rating the training program.
19. The training program had a positive impact on most of participants' attitudes towards CAN one month after completing the training package.

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6. APPENDICES

6.1 ETHICAL APPROVAL FOR STUDY 1

Rasha Abdullah Al-Dabaan
40a Bryanston Court
George Street
W1H 7HA

12 September 2011

Dear Rasha

BDM/10/11-93 A survey of UK and Saudi Arabian dentists' knowledge of child abuse and neglect.

Thank you for sending in the amendments requested to the above project. I am pleased to inform you that these meet the requirements of the BDM RESC and therefore that full approval is now granted.

Please ensure that you follow all relevant guidance as laid out in the King's College London Guidelines on Good Practice in Academic Research (http://www.kcl.ac.uk/college/policyzone/index.php?id=247).

For your information ethical approval is granted until **12 September 2013**. If you need approval beyond this point you will need to apply for an extension to approval at least two weeks prior to this explaining why the extension is needed, (please note however that a full re-application will not be necessary unless the protocol has changed). You should also note that if your approval is for one year, you will not be sent a reminder when it is due to lapse.

If you do not start the project within three months of this letter please contact the Research Ethics Office. Should you need to modify the project or request an extension to approval you will need approval for this and should follow the guidance relating to modifying approved applications:
http://www.kcl.ac.uk/research/ethics/applicants/modifications.html

Any unforeseen ethical problems arising during the course of the project should be reported to the approving committee/panel. In the event of an untoward event or an adverse reaction a full report must be made to the Chairman of the approving committee/review panel within one week of the incident.

Please would you also note that we may, for the purposes of audit, contact you from time to time to ascertain the status of your research.
If you have any query about any aspect of this ethical approval, please contact your panel/committee administrator in the first instance (http://www.kcl.ac.uk/research/ethics/contacts.html). We wish you every success with this work.

With best wishes

Yours sincerely
Jim Summers
Research Ethics Team Leader
c.c. Professor Tim Newton

6.2 INFORMATION SHEET FOR PARTICIPANTS

(STUDY 1)

YOU WILL BE GIVEN A COPY OF THIS INFORMATION SHEET

A Survey of UK and Saudi Arabian Dentists' Knowledge of Child Abuse and Neglect

We would like to invite you to participate in this postgraduate research project. You should only participate if you want to; choosing not to take part will not disadvantage you in any way. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information.

What is the purpose of the study?

This part of the study explores dentists' knowledge of child abuse and neglect, professional experience with suspected child abuse and neglect and attitudes towards reporting suspected cases in the UK and Saudi Arabia.

What are the possible benefits of this research?

As a result of the survey, an intervention training program may be developed to improve dentists' response to child abuse and neglect.

Who have we asked to participate?

We have invited dental practitioners with at least one year of experience who are working in the UK or in Saudi Arabia to take part in this study. Dentists from three major cities of Saudi Arabia; Riyadh, Jeddah and Dammam who are working in university hospitals and dental clinics, public hospitals, privately owned hospitals, dental clinics and polyclinics as well as UK dentists appearing on the 2009 General Dental Council register are included.

What will participation involve?

You will be asked to fill out a self-administered questionnaire that will take approximately 10-15 minutes. The survey will invite you to comment on the following:

- Your knowledge of risk factors related to child abuse and neglect and the extent to which you can recognize signs of such phenomenon.

- Any history of professional experience with suspected child abuse and neglect that you may have.

- Your attitudes towards reporting suspected abuse and perceived barriers and facilitating factors to reporting child abuse or neglect in Saudi Arabia and the UK.

As described in the covering letter accompanying this Information Sheet your participation is anonymised and your response is confidential. As participation is anonymous it will not be possible for us to withdraw

your data once you have returned your questionnaire. It is up to you to decide whether to take part or not. Submission of a completed questionnaire implies consent to participate. You will be very welcome to a copy of the final report.

If this study has harmed you in any way you can contact King's College London using the details below for further advice and information:

Professor Jonathon Timothy Newton

Unit of Social and Behavioural Sciences, King's College London Dental Institute

Tel: 020 7346 3481

E-mail: tim.newton@kcl.as.uk

Contact for further information

Rasha Al-Dabaan

Unit of Social and Behavioural Sciences, King's College London Dental Institute

E-mail: rasha.al-dabaan@kcl.ac.uk

6.3 COVER LETTER (STUDY 1)

Dear Dental Colleague,

I am sending you this letter to ask for your help in a postgraduate research project currently running at King's College London. The project is an online survey and is part of a PhD research in the Department of Oral Health Services Research & Dental Public Health Social and Behavioural Sciences at King's College London.

The project investigates UK and Saudi dental practitioners' knowledge of signs of child abuse and neglect and explores attitudes and barriers towards identifying and reporting child abuse and neglect. All responses are anonymous and confidential and are gathered through a brief online survey. I am writing to ask you to consider helping us with this research by completing this survey.

The **link** to the survey can be found here: xxxxxxx

Then enter this **password** to access the questionnaire is: xxxx

You must enter your **serial number** in the provided box: xxxx

Your participation is voluntary and no health, financial, professional, or employment risks to you are posed. Be assured that your responses are confidential and all identifiers related to you will be removed prior to data analysis. Moreover, only aggregate statistics will be generated. The findings will benefit the dental practice in terms of dealing with cases of child abuse and neglect. The more responses I receive, the more reliable the research will be. Therefore, I ask that you please take 10 minutes to complete this questionnaire.

If you have any questions or you would like to find out more about this project, please contact me on: rasha.al-dabaan@kcl.ac.uk

I appreciate your assistance in helping to understand important issues that impact the dental practice and safeguarding children and I do hope you will consider spending a few minutes completing this anonymous and confidential survey.

Yours faithfully,

Unit of Social and Behavioural Sciences, King's College London Dental Institute

6.4 THANK YOU / REMINDER LETTER (STUDY 1)

Dear Dental Colleague,

A questionnaire investigating UK and Saudi dental practitioners' knowledge of signs of child abuse and neglect and exploring attitudes and barriers towards identifying and reporting child abuse and neglect was mailed to you two weeks ago.

Your name was randomly selected from dentists appearing on the 2009 register living in London.

If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If not, please do so today. We are especially grateful for your help because it is only by asking people like you to share your experiences and knowledge that we can improve dentists' intention to identify and report child abuse and neglect.

If you did not receive a questionnaire, or if it was misplaced, please send me an e-mail on rasha.al-dabaan@kcl.ac.uk ,we will get another one in the mail to you as soon as possible.

Sincerely,

Rasha Al-Dabaan

Oral Health Services Research & Dental Public Health Division, King's College London

6.5 STUDY 1 QUESTIONNAIRE (PRELIMINARY VERSION)

PART ONE
Demographics

1. **Age:**
   - ☐ Less than 30 years
   - ☐ 31-40 years
   - ☐ 41-50 years
   - ☐ 51-60 years
   - ☐ More than 60 years
2. **Gender:** ○ Male ○ Female
3. **Nationality:** ○ Saudi ○ British
4. **How long have you been practicing dentistry?**
   - ☐ 1 - 5 years
   - ☐ 6 - 10 years
   - ☐ 11 - 20 years
   - ☐ 21- 30 years
   - ☐ More than 30 years
5. **What is the last degree you have obtained?**
   - ☐ Bachelor
   - ☐ Master
   - ☐ PhD
   - ☐ Fellowship
   - ☐ Board
   - ☐ Other (Please specify) .....
6. **Please, state country of this qualification.**
   - ☐ Saudi Arabia
   - ☐ UK
   - ☐ Other (Please specify) .....
7. **What is your specialty?**
   - ☐ General Dentistry
   - ☐ AGD (Advanced General Dentistry)
   - ☐ Restorative Dentistry
   - ☐ Paediatric Dentistry
   - ☐ Orthodontics
   - ☐ Periodontics
   - ☐ Maxillofacial Surgery
   - ☐ Prosthodontics
   - ☐ Endodontics
   - ☐ Oral Medicine
8. **Where do you currently practice dentistry? (Tick all that apply)**
   - ☐ University
   - ☐ Public Hospital
   - ☐ Private Hospital
   - ☐ Medical Polyclinic
   - ☐ Private Dental Clinic
   - ☐ Other (Please specify) .....
9. **Please, state how many hours do you practice dentistry per week?**
   --------- Hours/week
10. **Approximately how many children do you see in your practice per week?**
    - ☐ None
    - ☐ Less than 10 children
    - ☐ 10 - 20 children
    - ☐ 21- 40 children
    - ☐ More than 40 children

1

PART TWO

Knowledge regarding the recognition of forms of child abuse and neglect, risk factors, manifestations of physical abuse ,and indicators of child abuse and neglect

Q1.The following are forms of child abuse or neglect :(Please, circle your answer)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	▼	▼	▼	▼	▼
1) Failure to seek needed medical treatment	5	4	3	2	1
2) Neglect of child education	5	4	3	2	1
3) Beating with a hand or object causing injury	5	4	3	2	1
4) Non-injurious spanking	5	4	3	2	1
5) Calling names and verbal humiliation	5	4	3	2	1
6) Sexual abuse	5	4	3	2	1
7) Lack of interest in child's problems	5	4	3	2	1

Other forms (Please specify) ……..

Q2.The following factors increase the risk for child abuse or neglect:
(Please, circle your answer.)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	▼	▼	▼	▼	▼
1) Child under two years old	5	4	3	2	1
2) Child with disability	5	4	3	2	1
3) Child with medical condition	5	4	3	2	1
4) Caregiver substance abuse (alcohol/drug)	5	4	3	2	1
5) Young parental age (<19 years)	5	4	3	2	1
6) Overcrowded household	5	4	3	2	1
7) Family with step parent	5	4	3	2	1
8) Family with single mother	5	4	3	2	1
9) Family with single father	5	4	3	2	1
10) Polygamous families	5	4	3	2	1
11) Loss of job	5	4	3	2	1
12) Low socio-economic status	5	4	3	2	1
13) Medium to high socio- economic status	5	4	3	2	1

Other forms (Please specify)……..

Q3. Most common manifestations of physical abuse are:
(Please, circle your answer.)

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
		▼	▼	▼	▼	▼
1)	Bruises on the neck	5	4	3	2	1
2)	Injuries to soles of feet	5	4	3	2	1
3)	Injuries to palms of hands	5	4	3	2	1
4)	Orofacial injuries	5	4	3	2	1
5)	Bone fractures	5	4	3	2	1
6)	Skin and mucosal burns	5	4	3	2	1
7)	Head lice	5	4	3	2	1

Other forms (Please specify)……..

Q4. Indicators of child abuse and neglect could be seen as:
(Please, circle your answer.)

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
		▼	▼	▼	▼	▼
1)	Bruises on soft tissue of the cheek	5	4	3	2	1
2)	Intra oral injuries	5	4	3	2	1
3)	Bruises in the forehead	5	4	3	2	1
4)	Overt sexually suggestive behaviour	5	4	3	2	1
5)	Signs of delayed social and intellectual development	5	4	3	2	1
6)	Poor general hygiene of the child	5	4	3	2	1
7)	Poor general health of the child	5	4	3	2	1
8)	Rampant caries	5	4	3	2	1

Other forms (Please specify)……..

PART THREE
Experience with child abuse and neglect

Q5. Approximately how often do you see children with neglected dentitions?

- ☐ I don't see children
- ☐ None
- ☐ Once a day
- ☐ More than once a day
- ☐ Once a week
- ☐ Once a month
- ☐ Once every six months
- ☐ Once a year

Q6. Have you ever suspected that any of your child patients in your practice were subject to child abuse in the last 5 years?

- ☐ Yes
- ☐ No

Q7. What actions did you take? (Tick all that apply)

- ☐ Dismissed/ didn't take any actions
- ☐ Documented signs of abuse in the patient's record
- ☐ Discussed the case with the child's caregiver
- ☐ Discussed the case with a senior staff member
- ☐ Discussed the case with a colleague
- ☐ Contacted social services
- ☐ Contacted the police
- ☐ Other (please specify) .....

Q7. How many suspected cases of child abuse and neglect have you seen in the last five years? (Please, circle your answer.)

	None	1	2	3	4	5	More than 5
1) Physical Abuse	0	1	2	3	4	5	>5
2) Emotional Abuse	0	1	2	3	4	5	>5
3) Sexual Abuse	0	1	2	3	4	5	>5
4) Neglect	0	1	2	3	4	5	>5

Q8. Does the place where you work have a protocol of dealing with child abuse and neglect?

- ☐ Yes
- ☐ No
- ☐ I don't know

Q9. Would you be willing to report a suspected case of child abuse?

- ☐ Yes
- ☐ No
- ☐ I don't know

Q10. Who do you prefer to discuss or refer concern in cases of suspicion of child abuse or neglect? (Tick all that apply)

- ☐ Colleague
- ☐ Senior staff
- ☐ Caregiver
- ☐ Social services
- ☐ Police
- ☐ Other (Please specify).....

PART FOUR

Barriers to reporting suspected cases of child abuse and neglect

Q11. The following factors may sometimes act as barriers in the decision towards reporting suspected cases of child abuse among dentists.:
(Please, circle your answer.)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	▼	▼	▼	▼	▼
1) Lack of certainty about diagnosis	5	4	3	2	1
2) Lack of knowledge in referral procedures of child abuse and neglect	5	4	3	2	1
3) Fear of unknown consequences to the child	5	4	3	2	1
4) Fear of negative effects on the child's family	5	4	3	2	1
5) Fear of family violence towards the child	5	4	3	2	1
6) Fear of family violence against the dentist	5	4	3	2	1
7) Concerns about confidentiality	5	4	3	2	1
8) Dentists have no legal obligations to report abuse	5	4	3	2	1
9) Fear of negative impact on dental practice	5	4	3	2	1
10) Fear of litigation	5	4	3	2	1
11) Reporting child abuse is against my social norms	5	4	3	2	1

Other forms (Please specify).....

PART FIVE

Present knowledge and attitudes towards training programs

Q12. Have you ever been on a child protection training program?

☐ Yes
☐ No

Q13. What type of child protection training did you take?
(Tick all that apply)

☐ Child abuse/child protection included in undergraduate or initial training
☐ Child abuse/child protection as part of postgraduate training
☐ Training workshops in child abuse /child protection since my graduation

Q13. Please, circle your answer.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	▼	▼	▼	▼	▼
1) Dentists' knowledge about child protection protocols is important.	5	4	3	2	1
2) More training is required for dentists in this field.	5	4	3	2	1
3) I can confidently recognize signs of abuse in a child.	5	4	3	2	1

6.6 STUDY 1 QUESTIONNAIRE (FINAL VERSION)

KING'S College LONDON

Rasha A. Al-Dabaan
Unit of Social and Behavioural Sciences
King's College London Dental Institute

Dear Dental Colleagues,

I am writing to ask for your help in a postgraduate research project currently running at King's College London. The project is an online survey and is part of a PhD research in the Department of Oral Health Services Research & Dental Public Health Social and Behavioural Sciences at King's College London.
The project investigates UK and Saudi dental practitioners' knowledge of signs of child abuse and neglect and explores attitudes and barriers towards identifying and reporting child abuse and neglect. All responses are anonymous and confidential. I am writing to ask you to consider helping us with this research by completing this survey.

Your participation is voluntary and no health, financial, professional, or employment risks to you are posed. Be assured that your responses are confidential and all identifiers related to you will be removed prior to data analysis. Moreover, only aggregate statistics will be generated. The findings will benefit the dental practice in terms of dealing with cases of child abuse and neglect. The more responses I receive, the more reliable the research will be. Therefore, I ask that you please take 10 minutes to complete this questionnaire.
If you have any questions or you would like to find out more about this project, please contact me at:
rasha.al-dabaan@kcl.ac.uk
I appreciate your assistance in helping to understand important issues that impact the dental practice and safeguarding children and I do hope you will consider spending a few minutes completing this anonymous and confidential survey.

Yours faithfully,
Unit of Social and Behavioural Sciences, King's College London Dental Institute

PART ONE
Demographics

1 **Age:**

- ☐ 30 years or less
- ☐ 31-40 years
- ☐ 41-50 years
- ☐ 51-60 years
- ☐ More than 60 years

2 **Gender:** ○ Male ○ Female

3 **Nationality:** ○ Saudi ○ British ○ Other (Please specify).....

4 **How long have you been practicing dentistry?**

- ☐ 1 - 5 years
- ☐ 6 - 10 years
- ☐ 11 - 20 years
- ☐ 21- 30 years
- ☐ More than 30 years

5 **What is the last degree you have obtained?**

- ☐ Bachelor
- ☐ Master
- ☐ PhD
- ☐ Fellowship
- ☐ Board
- ☐ Other (Please specify) .....

6 **Please, state country of this qualification.**

- ☐ Saudi Arabia
- ☐ UK
- ☐ Other (Please specify) .....

7 **What is your specialty?**

- ☐ General Dentistry
- ☐ AGD (Advanced General Dentistry)
- ☐ Restorative Dentistry
- ☐ Paediatric Dentistry
- ☐ Orthodontics
- ☐ Periodontics
- ☐ Maxillofacial Surgery
- ☐ Prosthodontics
- ☐ Endodontics
- ☐ Oral Medicine
- ☐ Dental public health

8 **Where do you currently practice dentistry? (Tick all that apply)**

- ☐ University
- ☐ Public Hospital
- ☐ Private Hospital
- ☐ Medical Polyclinic
- ☐ Private Dental Clinic
- ☐ Other (Please specify) .....

9 **Please, state how many hours do you practice dentistry per week?**

--------- Hours/week

10 **Approximately how many children do you see in your practice per week?**

- ☐ None
- ☐ Less than 10 children
- ☐ 10 - 20 children
- ☐ 21- 40 children
- ☐ More than 40 children

PART TWO

Knowledge regarding the recognition of forms of child abuse and neglect, risk factors, manifestations of physical abuse ,and indicators of child abuse and neglect

Q1.The following are forms of child abuse or neglect :(Please, circle your answer)

	Strongly Disagree ▼	Disagree ▼	Neutral ▼	Agree ▼	Strongly Agree ▼
1) Failure to seek needed medical treatment	1	2	3	4	5
2) Neglect of child education	1	2	3	4	5
3) Beating with a hand or object causing injury	1	2	3	4	5
4) Non-injurious spanking	1	2	3	4	5
5) Calling names and verbal humiliation	1	2	3	4	5
6) Sexual abuse	1	2	3	4	5
7) Lack of interest in child's problems	1	2	3	4	5

Q2.The following factors increase the risk for child abuse or neglect:
(Please, circle your answer.)

	Strongly Disagree ▼	Disagree ▼	Neutral ▼	Agree ▼	Strongly Agree ▼
1) Child under two years old	1	2	3	4	5
2) Child with disability	1	2	3	4	5
3) Child with medical condition	1	2	3	4	5
4) Caregiver substance abuse (alcohol/drugs)	1	2	3	4	5
5) Young parental age (<19 years)	1	2	3	4	5
6) Overcrowded household	1	2	3	4	5
7) Family with step parent	1	2	3	4	5
8) Family with single mother	1	2	3	4	5
9) Family with single father	1	2	3	4	5
10) Polygamous families	1	2	3	4	5
11) Loss of job	1	2	3	4	5
12) Low socio-economic status	1	2	3	4	5
13) Medium to high socio- economic status	1	2	3	4	5

Q3. Most common manifestations of physical abuse are:
(Please, circle your answer.)

	Strongly Disagree ▼	Disagree ▼	Neutral ▼	Agree ▼	Strongly Agree ▼
1) Bruises on the neck	1	2	3	4	5
2) Injuries to soles of feet	1	2	3	4	5
3) Injuries to palms of hands	1	2	3	4	5
4) Orofacial injuries	1	2	3	4	5
5) Bone fractures	1	2	3	4	5
6) Skin and mucosal burns	1	2	3	4	5

Q4. Indicators of child abuse and neglect could be seen as:
(Please, circle your answer.)

	Strongly Disagree ▼	Disagree ▼	Neutral ▼	Agree ▼	Strongly Agree ▼
1) Bruises on soft tissue of the cheek and neck	1	2	3	4	5
2) Intra oral injuries	1	2	3	4	5
3) Bruises on a toddler's forehead	1	2	3	4	5
4) Overt sexually suggestive behaviour	1	2	3	4	5
5) Signs of delayed social and intellectual development	1	2	3	4	5
6) Child's poor general hygiene	1	2	3	4	5
7) Child's poor general health	1	2	3	4	5
8) Rampant caries	1	2	3	4	5
9) Head lice	1	2	3	4	5

PART THREE
Experience with child abuse and neglect

Q5. Approximately how often do you see children with neglected dentitions?

- ☐ I don't see children
- ☐ None
- ☐ Once a day
- ☐ More than once a day
- ☐ Once a week
- ☐ Once a month
- ☐ Once every six months
- ☐ Once a year

Q6a. Have you seen a child that you <u>suspected</u> was subject to child abuse in the last 5 years?

- ☐ Yes →
- ☐ No

Q6b. How many <u>suspected</u> cases of child abuse and neglect have you seen in the last five years?
(Please, circle your answer.)

	1 ▼	2 ▼	3 ▼	4 ▼	5 ▼	More than 5 ▼
1) Physical Abuse	1	2	3	4	5	>5
2) Emotional Abuse	1	2	3	4	5	>5
3) Sexual Abuse	1	2	3	4	5	>5
4) Neglect	1	2	3	4	5	>5

Q6c. What actions did you take? (Tick all that apply)

- ☐ Dismissed/ didn't take any actions
- ☐ Documented signs of abuse in the patient's record
- ☐ Discussed the case with the child's caregiver
- ☐ Discussed the case with a senior staff member
- ☐ Discussed the case with a colleague
- ☐ Contacted social services
- ☐ Contacted the police

Q7. Have you seen any children in the last 5 years that you were <u>informed</u> were subject to child abuse and neglect?

	None ▼	1 ▼	2 ▼	3 ▼	4 ▼	5 ▼	More than 5 ▼
1) Physical Abuse	0	1	2	3	4	5	>5
2) Emotional Abuse	0	1	2	3	4	5	>5
3) Sexual Abuse	0	1	2	3	4	5	>5
4) Neglect	0	1	2	3	4	5	>5

Q8. Does the place where you work have a protocol of dealing with child abuse and neglect?

- ☐ Yes
- ☐ No
- ☐ I don't know

Q9. Would you be willing to report a suspected case of child abuse?

- ☐ Yes
- ☐ No
- ☐ I don't know

Q10. Who do you prefer to discuss or refer concern in cases of suspicion of child abuse or neglect? (Tick all that apply)

- ☐ Colleague
- ☐ Senior staff
- ☐ Caregiver
- ☐ Social services
- ☐ Police

PART FOUR

Barriers to reporting suspected cases of child abuse and neglect

Q11. The following factors may sometimes act as barriers in the decision towards reporting suspected cases of child abuse among dentists.:
(Please, circle your answer.)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	▼	▼	▼	▼	▼
1) Lack of certainty about diagnosis	1	2	3	4	5
2) Lack of knowledge in referral procedures of child abuse and neglect	1	2	3	4	5
3) Fear of unknown consequences to the child	1	2	3	4	5
4) Fear of negative effects on the child's family	1	2	3	4	5
5) Fear of family violence towards the child	1	2	3	4	5
6) Fear of family violence against the dentist	1	2	3	4	5
7) Concerns about confidentiality	1	2	3	4	5
8) Dentists have no legal obligations to report abuse	1	2	3	4	5
9) Fear of negative impact on dental practice	1	2	3	4	5
10) Fear of litigation	1	2	3	4	5
11) Reporting child abuse is against my social norms	1	2	3	4	5

PART FIVE

Present knowledge and attitudes towards training programs

Q12a. Have you ever been on a child protection training program?

- ☐ Yes
- ☐ No

Q12b. What type of child protection training did you take?
(Tick all that apply)

- ☐ Child abuse/child protection included in undergraduate or initial training
- ☐ Child abuse/child protection as part of postgraduate training
- ☐ Training workshops in child abuse /child protection since my graduation
- ☐ Computer-based training

Q13. Please, circle your answer.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	▼	▼	▼	▼	▼
1) Dentists' knowledge about child protection protocols is important.	1	2	3	4	5
2) More training is required for dentists in this field.	1	2	3	4	5
3) I can confidently recognize signs of abuse in a child.	1	2	3	4	5

Thank YOU for taking time to complete this questionnaire. Your reply is much appreciated and valuable in learning about dentists' knowledge and attitudes towards child abuse and neglect.

If you have any comments on this survey or suggestions please feel free to do so in the space provided below.

If you have any questions, contact me at:

rasha.al-dabaan@kcl.ac.uk

Unit of Social and Behavioural Sciences, King's College London Dental Institute

6.7 ETHICAL APPROVAL FOR STUDY 2

Dr Rasha Abdullah Al-Dabaan
Flat 40a Bryanston Court
George Street
London W1H 7HA

04 February 2013

Dear Dr Al-Dabaan

BDM/12/13-16 A web based training programme in safeguarding children for dental practitioners in Saudi Arabia.

Review Outcome: Full Approval

Thank you for sending in the amendments/clarifications requested to the above project. I am pleased to inform you that these meet the requirements of the BDM RESC and therefore that full approval is now granted with the following provisos:

1. Information Sheet:
   I. Please remove the sentences 'There is a possibility that participants may state that they did not report an instance of suspected CAN. This would constitute a failure of the professional duty of care to the child patient. Since participation is anonymous, it will not be possible to identify any individual who made such a report' and 'The deadline for withdrawal of participant data by participants will be up to analysis of the results'.
   II. As the questionnaire will be completed online please include the following: 'Submission of a partially completed questionnaire (by pressing the 'store', 'next' or 'continue' buttons) implies consent to participate, and for data entered up to this point to be included in the study. Submission of a completed questionnaire (by pressing the 'submit' or 'finish' buttons) implies consent to participate, and for all data collected to be used'.
2. Questionnaire: As the questionnaire involves the collection of data falling under the UK Data Protection Act 1998 definition of 'sensitive personal data' (i.e. nationality), you will need to gain explicit consent from participants to collect and use such data. In order to gain explicit consent, please include a tick box next to the following wording at the beginning of your questionnaire allowing participants to agree to the clause: '*I consent to the processing of my personal information for the purposes explained to me. I understand that such information will be treated in accordance with the terms of the UK Data Protection Act 1998'*. Note that you are only able to use 'sensitive' data from questionnaires where the participant has agreed. If the participant does not agree, the sensitive data would need to be destroyed as explicit consent has not been given.

Note that you do not need to submit a response to the above provisos, however it is a condition of the approval granted by the BDM RESC that the provisos are carried out prior to the study commencing. If the provisos are not adhered to, the approval granted by the BDM RESC would no longer be valid. Should you have any queries on this please do not hesitate to contact the Research Ethics Office.

Please ensure that you follow all relevant guidance as laid out in the King's College London Guidelines on Good Practice in Academic Research (http://www.kcl.ac.uk/college/policyzone/index.php?id=247).

For your information ethical approval is granted until **04 February 2014**. If you need approval beyond this point you will need to apply for an extension to approval at least two weeks prior to this explaining why the extension is needed, (please note however that a full re-application will not be necessary unless the protocol has changed). You should also note that if your approval is for one year, you will not be sent a reminder when it is due to lapse.

Ethical approval is required to cover the duration of the research study, up to the conclusion of the research. The conclusion of the research is defined as the final date or event detailed in the study description section of your approved application form (usually the end of data collection when all work with human participants will have been completed), not the completion of data analysis or publication of the results. For projects that only involve the further analysis of pre-existing data, approval must cover any period during which the researcher will be accessing or evaluating individual sensitive and/or un-anonymised records. Note that after the point at which ethical approval for your study is no longer required due to the study being complete (as per the above definitions), you will still need to ensure all research data/records management and storage procedures agreed to as part of your application are adhered to and carried out accordingly.

If you do not start the project within three months of this letter please contact the Research Ethics Office.

Should you wish to make a modification to the project or request an extension to approval you will need approval for this and should follow the guidance relating to modifying approved applications: http://www.kcl.ac.uk/innovation/research/support/ethics/applications/modifications.aspx
The circumstances where modification requests are required include the addition/removal of participant groups, additions/removal/changes to research methods, asking for additional data from participants, extensions to the ethical approval period. Any proposed modifications should only be carried out once full approval for the modification request has been granted.

Any unforeseen ethical problems arising during the course of the project should be reported to the approving committee/panel. In the event of an untoward event or an adverse reaction a full report must be made to the Chair of the approving committee/review panel within one week of the incident.

Please would you also note that we may, for the purposes of audit, contact you from time to time to ascertain the status of your research.

If you have any query about any aspect of this ethical approval, please contact your panel/committee administrator in the first instance (http://www.kcl.ac.uk/innovation/research/support/ethics/contact.aspx). We wish you every success with this work.

With best wishes

Yours sincerely

Catherine Fieulleteau
Senior Research Ethics Officer

Cc: Professor Tim Newton

6.8 GENERAL RISK ASSESSMENT FORM

GENERAL RISK ASSESSMENT FORM

KING'S College LONDON
University of London

1	RISK ASSESSMENT NUMBER	1	ISSUE NO.	1

2	PERSON RESPONSIBLE FOR WORK (e.g. PRINCIPAL INVESTIGATOR)		
Name: Rasha AlDabaan		Position:	PhD Student
School: Dental Institute		Division:	Social & Behavioural Sciences

3	PERSON CONDUCTING THE RISK ASSESSMENT		
Name: Tim Newton		Position	Head of Unit
School: Dental Institute		Date:	5 December 2012

4	LOCATION OF WORK ACTIVITY
Saudi Arabia.	

5	ACTIVITY DESCRIPTION
Recruitment of dental practitioners to take part in a web based training programme on child abuse and neglect.	

6	AT RISK GROUPS		
Type		Y/N	Describe additional precautions required (if any)
Maintenance workers		N	
Young persons		N	
Other (describe)		N	

7	HAZARDS			
		Present Y/N	Describe hazard or state whether a Specific Risk Assessment supplement is used (and attach)	Adequately controlled Y/N (refer to controls section 8B below)
Biological		N		
Chemical		N		
Physical		N		
Other (ergonomic)		Y	Working overseas	The Student is a dentist who

			originates from Saudi Arabia, and is a dental practitioner. There is no increased risk in comparison to her work prior to becoming a PhD student.

8	**CONTROL MEASURES**		
8A	**HIERACHY OF CONTROL**		
Type		Used Y/N	Justification
Elimination		N	
Substitution		N	
Engineering (local exhaust ventilation etc.)		N	
Behavioural/Administrative (SSW etc)		Y	The student will maintain regular contact with supervisors (weekly) and will contact them if there are any problems
Personal Protective Equipment		N	
8B	**CONTROLS IDENTIFIED**		
Type (for each hazard identified at 7 above a related control should be listed here)		In place Y/N	Comments
Email contact and telephone number for emergencies		Y	

9	**INFORMATION, INSTRUCTION, TRAINING AND SUPERVISION (DESCRIBE COURSES AND/OR SPECIAL ARRANGEMENTS REQUIREMENTS)**
	NONE

10	**MONITORING**		
Type		Required Y/N	Describe (include results of any monitoring carried out)
Maintenance		N	
Environmental monitoring		N	
Self inspection/reporting		Y	Personal reflection on risk and communication with supervisors

Health Surveillance	N	

11	**EMERGENCY PROCEDURES**	
Type		Describe
Spillages		
First aid		
Other (specify)		

12	**PROCESS RISK ASSESSMENT**					
Overall risk rating (select one rating)						
		RISK ASSESSMENT MATRIX				
	SEVERITY	Fatality	Medium	High	High	Unacceptable
		RIDDOR	Medium	Medium	High	High
		Moderate Injury	Low	Low	Med	Medium
		Minor Injury	Insignificant	Low	Low	Low
			Unlikely	Possible	Probable	Certain
			LIKELIHOOOD			
Justification for rating (describe reasoning for risk rating		Insignificant. There is little risk likelihood, since the student will be in her home country and in her usual work surroundings.				

13	**RECOMMENDATIONS FOR FURTHER ACTION**		
Recommendation		Who by	When
NONE			

14	**ASSESSMENT REVIEW**						
Review	Date	Assessor name (PRINT)	Assessor (signature)	Outcome of review Change/No Change	Managers name (PRINT)	Managers acceptance (Signature)	
1							
2							
3							

Guidance for completion of
GENERAL RISK ASSESSMENT FORM

KING'S College LONDON
University of London

1. **RISK ASSESSMENT NUMBER**
This is a unique number to aid identification for amend purposes etc. System used is based on School/Directorate and 3 digit sequential number and year, e.g. MED/001(2009)_is School of Medicine, Risk assessment form, 001. Refer to Safety Procedure SPR025-01-HSEPO. Alternatively if managed at department/ division level HR/HSEPO/001(2009)

2. **PERSON RESPONSIBLE FOR WORK**
The Head of Department or Principal Investigator is directly responsible for ensuring work involving hazardous substances are suitably risk assessed before work commences.

3. **PERSON CONDUCTING THE RISK ASSESSMENT**
This is the trained risk assessor.

4. **LOCATION OF WORK ACTIVITY**
The location of an activity can significantly alter the risk. Different levels of risk may arise from the same activity performed in different locations if there is also a difference in the standards of facilities of the location. State all locations where the activity(ies) will be conducted.

5. **ACTIVITY DESCRIPTION**
A brief description of process being undertaken should be included here.

6. **AT RISK GROUPS**
In some cases named individuals may be indicated in this section. In other cases it will be more appropriate to refer to groups of people such as cleaning staff etc. Identification of groups particularly at risk who may require additional safe guards is particularly important.

7. **HAZARDS**
It is extremely unlikely that a process will only involve a chemical related hazard, use of equipment, such as hot plates, evaporators etc will bring with it additional hazards. Other hazards such as biological agents may also be present. The assessment of risk in the process must take into account all the types of hazard.

8. **CONTROL MEASURES**
It is important that the hierarchy of control is followed. An assessment must be made as to why a higher level of control, e.g. substitution, cannot be used in this particular process.

Once determined all control methods, e.g. use of enclosed equipment, fume cupboards, safe system of work, personal protective equipment (PPE) etc must be detailed. Where appropriate, specify class of equipment, type of material and level of performance (particularly relevant for selecting suitable PPE).

9. **INFORMATION, INSTRUCTION, TRAINING AND SUPERVISION**
It is important to describe the level of competence expected and the identification of any special training or supervisory requirements.

10. **MONITORING**

Some equipment, e.g. fume cupboards require user checks and statutory testing. To ensure environmental standards, e.g. Workplace Exposure Limits (WEL) are not exceeded, monitoring may be carried out at specified intervals. Working with some substances, e.g. respiratory sensitizers, will require regular health surveillance programs to be introduced.

11. **EMERGENCY PROCEDURES**

The details given here must be compatible with your Schools emergency plan. The appropriate persons must be notified and suitably trained.

12. **PROCESS RISK ASSESSMENT**

Based on all the information gathered in sections 2-14 of the General risk assessment form, including any supplementary sheets, an assessment of risk and brief justification for rating should be made using the matrix below.

RISK ASSESSMENT MATRIX					
SEVERITY	Fatality	Medium	High	High	Unacceptable
	RIDDOR	Medium	Medium	High	High
	Moderate Injury	Low	Low	Med	Medium
	Minor Injury	Insignificant	Low	Low	Low
		Unlikely	Possible	Probable	Certain
		LIKELIHOOD			

Please note: The assessment should be based on conditions at time of assessment and not based upon the “ideal” controlled environment. There is nothing wrong in assessing a particular process “high” or “medium” risk. A process should not be assessed “low” or “insignificant” risk unless that is truly the assessment.

13. **RECOMMENDATIONS**

All high risks and most medium risks should have recommendations made to attempt to lower the risk rating where possible (although not possible in all instances).

Recommendations should be entered here and assigned to a person with a completion date. Upon completion of the action a review of the assessment should be undertaken.

17. **ASSESSMENT REVIEW**

Assessments should be regularly reviewed and if significant changes occur, e.g. after an accident or legislative requirements alter, a review must be undertaken. If no significant changes occur all assessments should be reviewed no longer than 3 years after initial assessment or previous review.

Where a change is indicated, the assessment should be rewritten to include the changes

6.9 INFORMATION SHEET (STUDY 2)

INFORMATION SHEET FOR PARTICIPANTS

YOU WILL BE GIVEN A COPY OF THIS INFORMATION SHEET

A web-based training program in safeguarding children for dental practitioners in Saudi Arabia

This study has been reviewed by the BDM RESC of the King's College London. You are invited to participate in a PhD research project at King's College London. Participation is voluntary; choosing not to take part will not disadvantage you in any way. Before you decide whether or not you would like to take part, it is important for you to understand the purpose of the research and what your participation will involve. Please read the following information carefully, and discuss it with others if you wish.

What is the purpose of the study?
Based on the results of a previous survey we conducted on Saudi dental practitioners' knowledge and attitudes towards child abuse and neglect (CAN), we identified that dental practitioners are in need of training in safeguarding children. In response to this, we developed a web-based training program in child protection for dental practitioners in Saudi Arabia. This part of our research is intended to test the efficacy of the training program by exploring the knowledge of dental practitioners in child abuse and neglect before and after taking part in the web-based training program in child protection.

What are the possible benefits of this research?
There are no direct benefits to you from participation in the research. All participants who complete the training will be given a certificate of Continuing Professional Development stating that they have completed training in management of child abuse and neglect in dental settings. This training program is an intervention based on a previous survey developed to improve dentists' knowledge about child abuse and neglect.

Who have we asked to participate?
We have invited dental practitioners who are working in Saudi Arabia to take part in this study. Dental practitioners from all specialities are invited to take part in the child protection training program.

What will participation involve?
An e-mail will be sent inviting you to take part in this study. You will be asked to fill out a web-based questionnaire that will take approximately 10-15 minutes before taking part in the web-based training program.
The child protection training program consists of eight modules; each module ends with a self-assessment page that tests knowledge gained from the information in that module. The whole training program package will take around four hours to complete. The final part of this research process is voluntary; it involves completing a five-minute questionnaire to assess

whether or not dental practitioners have found the training package useful in their daily practice.

As described in the cover letter accompanying this information sheet, your participation in the web-based training program is anonymous, and your responses are confidential.

Submission of a partially completed questionnaire (by pressing the 'store', 'next', or 'continue' buttons) implies consent to participate, and data entered up to this point will be included in the study. Submission of a completed questionnaire (by pressing the 'submit' or 'finish' buttons) implies consent to participate, and all data collected will be used in the study.

You will be permitted to receive a copy of the final report. However, we will not be able to offer any advice on the management of individual cases.

If this study has harmed you in any way, you can contact King's College London using the details below for further advice and information:

Professor Jonathon Timothy Newton
Oral Health Services Research & Dental Public Health Social and Behavioural Sciences
Tel: 020 7346 3481
E-mail: tim.newton@kcl.as.uk

Contact for further information

Rasha Al-Dabaan
Oral Health Services Research & Dental Public Health Social and Behavioural Sciences
E-mail: rasha.al-dabaan@kcl.ac.uk

6.10 COVER LETTER (STUDY 2)

Dear Dental Colleague,

I am writing to ask for your help in a postgraduate research project currently running at King's College London. This project is an evaluation of an intervention based on a previous online survey that is part of a PhD research in the Department of Oral Health Services Research & Dental Public Health Social and Behavioural Sciences at King's College London.

Previously we found that there is a lack of training in child protection in Saudi Arabia, so we designed a web-based training program in child protection to increase dental practitioners' knowledge in child abuse and neglect. We would like to ask you to help us test how well this training programme works. Your participation is entirely anonymous and any information you give will be kept confidential. A questionnaire before taking part in the training program will be administered, followed by the actual web-based training program, and then a one month follow up questionnaire will be administered. The training program consists of eight modules and each module ends with a self-assessment page to test your knowledge. I am writing to ask you to consider helping us with this research by completing this child protection training program, which will help increase your knowledge in child protection.

The link to the training package can be found here:

www.candentist.com

Your participation is voluntary and no health, financial, professional, or employment risks to you are posed. Be assured that your responses are confidential and all identifiers related to you will be removed prior to data analysis. Moreover, only aggregate statistics will be generated. This training program will benefit dental practitioners, children, dental practices and the society in terms of dealing with cases of child abuse and neglect. The more responses I receive, the more reliable the research will be. Therefore, I ask that you please take part in this four hour training program. You will receive a certificate of completion of the training modules upon completion of the course from King's College London.

If you have any questions or you would like to find out more about this project, please contact me on: rasha.al-dabaan@kcl.ac.uk

I appreciate your assistance in helping to understand important issues that impact the dental practice and safeguarding children and I do hope you will consider taking part in this research.

Yours faithfully,

Rasha Al-Dabaan

Department of Oral Health Services Research & dental Public Health Social and Behavioural Sciences, King's College London.

6.11 TRAINING PROGRAM QUESTIONNAIRE

○ I consent to the processing of my personal information for the purposes explained to me. I understand that such information will be treated in accordance with the terms of the UK Data Protection Act 1998

Demographics

1. **Age:**
   - ☐ **30 years or less**
   - ☐ **31-40 years**
   - ☐ **41-50 years**
   - ☐ **51-60 years**
   - ☐ **More than 60 years**

2. **Gender:** ○ **Male** ○ **Female**

3. **Nationality:** ○ **Saudi** ○ **Other (Please specify)…….**

4. **How long have you been practicing dentistry?**
   - ☐ **1 - 5 years**
   - ☐ **6 - 10 years**
   - ☐ **11 - 20 years**
   - ☐ **21- 30 years**
   - ☐ **More than 30 years**

5. **What is the highest degree you obtained?**
   - ☐ **Bachelor**
   - ☐ **Master**
   - ☐ **PhD**
   - ☐ **Fellowship**
   - ☐ **Board**
   - ☐ **Other (Please specify) ……**

6. **What is your specialty?**
   - ☐ **General Dentistry**
   - ☐ **AGD (Advanced General Dentistry)**
   - ☐ **Restorative Dentistry**
   - ☐ **Paediatric Dentistry**
   - ☐ **Orthodontics**
   - ☐ **Periodontics**
   - ☐ **Maxillofacial Surgery**
   - ☐ **Prosthodontics**
   - ☐ **Endodontics**
   - ☐ **Oral Medicine**
   - ☐ **Dental public health**

7. Where do you currently practice dentistry? (Tick all that apply)

- ☐ University
- ☐ Public Hospital
- ☐ Private Hospital
- ☐ Medical Polyclinic
- ☐ Private Dental Clinic
- ☐ Other (Please specify) ……

8. Please, state how many hours do you practice dentistry per week?

---------- Hours/week

9. Approximately how many children do you see in your practice per week?

- ☐ None
- ☐ Less than 10 children
- ☐ 10 - 20 children
- ☐ 21- 40 children
- ☐ More than 40 children

MODULE 1

1. **Which international human rights treaty applies to all children and young people under the age of 18 years? (Choose one answer)**

a. The United Nations Convention on human rights.
b. The United Nations Convention on the Rights of the Child (1989).
c. The United Nations Convention on the Rights of the Child (1995).
d. The human rights watch
e. None of the above

2. **A 6-year old child has no friends. Do you think this: (Choose one answer)**

a. Normal for some children.
b. A bit sad but ok.
c. Concerning, but need to check out the reason.
d. Extremely concerning and warrants a child protection referral.

3. **A 9-month old baby is not interacting with anyone. Do you think this is: (Choose one answer)**

a. Normal
b. A bit delayed
c. A bit ahead of the expected development
d. Extremely delayed and worrying

4. **The main types of child abuse are: (Choose one answer)**

a. There are five main types: physical, emotional, sexual abuse, neglect and dental neglect
b. There are six main types: physical, psychological, emotional, sexual abuse, neglect and dental neglect

c. There are four main types: physical, emotional, financial and sexual abuse
d. There are four main types: physical, emotional, sexual abuse and neglect

5. The broad categories of basic needs for children are: (Choose one only)

   a. Psychological, physical, emotional, social and health
   b. Psychological, physical, emotional, financial and health
   c. Physical and health only
   d. All of the above

MODULE 2

1. Children with disabilities are particularly vulnerable to all types of abuse?
   a. True
   b. False
   c. Don't know

2. Domestic abuse/violence is a matter between adults and does not affect children
   a. True
   b. False
   c. Don't know

3. Very young children – e.g. under 1 year old – are particularly vulnerable to abuse and are frequently victims of fatalities related to abuse and neglect
   a. True
   b. False
   c. Don't know

4. What underlying factors make child abuse more likely? (select all that are correct)
   a. Poverty
   b. An overcrowded household
   c. A child having behaviour problems
   d. Mental ill health in the care giver
   e. Immature/young parents

5. Who, potentially could become an abuser or neglecter of children? (select all that apply)
   a. An alcoholic.
   b. A depressed person
   c. A stressed parent
   d. A sadistic person
   e. Anyone

MODULE 3

1. The key responsibilities of the dentist with regard to child abuse are: (Choose one only)
   a. Recognize, record, investigate and report
   b. Recognize, record and report
   c. Recognize and report
   d. Recognize and record

2. Factors that may sometimes act as barriers in the decision towards reporting suspected cases of child abuse among dentists are: (Select all that apply)
   a. Lack of certainty about diagnosis
   b. Lack of knowledge in referral procedures of child abuse and neglect
   c. Fear of unknown consequences to the child

d. Concerns about confidentiality
e. Dentists have no legal obligations to report abuse
f. Reporting child abuse is against my social norms
g. All of the above

MODULE 4

1. What prevents children from telling adults about abuse? (Select all that apply)
   a. Loyalty to their family
   b. Threats and fears about punishment
   c. Self-blame/they will break up family thus feel guilty
   d. May not realize what abuse is and think it happens to all children
   e. Embarrassment/don't want the shame
   f. Being asked directly
   g. All of the above

2. The following are suspicious factors in the presentation of the child/parent: (Select all that apply)

   a. Vague history of how the injury happened or inconsistent with the appearance
   b. Apparent age of injuries is inconsistent with the explanation given
   c. Delay in presentation of trauma and seeking medical care with no genuine reason
   d. Poor compliance with previous treatment/ appointments
   e. History of previous dental trauma
   f. Child's version of the history is different from the parent
   g. All of the above

MODULE 5

1. Children are most likely to be sexually abused by someone that they or their family don't already know e.g. a stranger?
   a. True
   b. False
   c. Don't know

2. Emotional Abuse: (Select all that apply)

   a. Can be the result of disciplining a child
   b. Can make a child feel worthless and unloved
   c. Can mean having home rules
   d. Can mean pushing your child too hard to succeed
   e. Can include verbal humiliation and calling names
   f. All the above

3. Emotional abuse may be happening when a child (select all that apply):

   a. Becomes withdrawn
   b. Has delayed intellectual development
   c. Is socially immature
   d. Has hyper alertness
   e. Has no outwardly signs
   f. All of the above

4. Neglect: (Select all that apply)

   a. Includes: Lack of interest in child's problems
   b. Does not include 'not meeting the baby's needs during pregnancy'

c. Is a failure to provide food and shelter.
d. Untreated rampant caries
e. Is failing to provide the latest gadgets for your children so they can be just like the other children in their class
f. Is failing to provide the child with education
g. All of the above

5. Neglect is happening when (select all that apply):

a. A child is occasionally untidy and dirty
b. A child is persistently hungry and tired
c. Inconsistent attendance to school
d. Failure to thrive
e. Untreated head lice
f. All of the above

6. Physical abuse can mean (Select all that apply):

a. Munchausen syndrome by proxy
b. A parent causing physical harm to a child.
c. A parent not preventing physical harm to a child.
d. All of the above.

7. Signs of physical abuse can be (select all that apply):

a. Inconsistent explanations of injuries to a child
b. Bruising on a baby who is not mobile
c. There is bruising to the shins and arms of an active child
d. Intra-oral injuries
e. All of the above

8. Sexual Abuse: (Select all that apply)

a. Can be perpetrated by anyone, adult, child, male, female
b. Is only perpetrated by men
c. Is always harmful to children
d. Is about satisfying the perpetrator's needs, not the child's.
e. All of the above

9. Chipped, cracked or broken teeth are common occurrences and should never be suspected as being caused by abuse.
a. True
b. False
c. Don't know

10. Intra-oral injuries that may be related to abuse include _____ (Select all that apply)

a. Petechia or echimosis of the mucosa, soft or hard palates
b. Ulcers related to sexually transmitted diseases (STDs) inappropriate to age
c. Fractured, displaced or avulsed teeth
d. Discoloured teeth from previous trauma
e. All of the above

11. **Signs of sexual abuse can be (select all that apply):**

    a. A 12 year old girl is pregnant
    b. A 6 year old has sexual knowledge beyond his years
    c. Two 4 year old children are curious about each other's genitals
    d. Self harm
    e. All of the above

12. **The physical, emotional and cognitive problems caused by child abuse may be irreversible.**

a. True
b. False
c. Don't know

MODULE 6

1. **Assessment of the child for Child abuse and neglect (CAN) should be: (Choose one answer)**

    a. Confined to the dental surgery
    b. From the moment the child enters the dental practice
    c. Only done by the dental practitioner
    d. a & c

2. **The key components of history taking in cases of suspected child abuse are: (Select all that apply)**

    a. Nature and time of trauma
    b. Consistency of history between child and parent
    c. Consistency of history with the findings
    d. Time when asked for medical help
    e. All of the above

MODULE 7

1. **Children often make things up - e.g. that they have been abused – so we must not take what they say seriously?**
    a. True
    b. False
    c. Don't know

2. **If you have a concern about a child it is a good idea to discuss this with everyone at work over a coffee?**
    a. True
    b. False
    c. Don't know

3. **If a child/young person is telling you about abuse. You should NOT: (Select all that apply)**

    a. Take the matter seriously
    b. Make promises you can't keep
    c. Investigate and interrogate
    d. Ask leading questions

e. All of the above

4. With questionable signs and injuries observed during a routine appointment, it is necessary to _____. (Select all that apply)

a. Report the suspected abuse immediately without questioning the caregiver or patient
b. Document the suspected abuse and wait until the next routine evaluation before taking any further steps
c. Question the caregiver/patient regarding the nature of the injury
d. None of the above

5. Would you be willing to report a suspected case of child abuse?

- ☐ **Yes**
- ☐ **No**
- ☐ **I don't know**

6. Who do you prefer to discuss or refer concern in cases of suspicion of child abuse or neglect? (Tick all that apply)

- ☐ **Colleague**
- ☐ **Senior staff**
- ☐ **Caregiver**
- ☐ **Social services**
- ☐ **Police**

MODULE 8

1. A child protection policy is a written plan of action confirming the dental practice's obligation to protect children from harm and also explains in detail how this is achieved.
a. True
b. False
c. Don't know

2. What should a child protection policy include? (Select all that apply)

a. Safe recruitment procedures that involves criminal checks of staff members upon employment in the practice
b. A clear protocol to be followed in case of suspected or disclosure of abuse.
c. Appointing a child protection leader in the team that is to be contacted in case of suspected CAN
d. Ensuring that children and young people should always be chaperoned.
e. Clear guidelines for when physical restraints can be used during dental treatment
f. a, b & C
g. All of the above

6.12 QUESTIONS RATING THE TRAINING PROGRAM

The post-training questionnaire ends with the following questions in order to rate the online training program:

1. Before taking part in this training package, have you ever been on a child protection training program?

Yes No

2. How would you rate this training program in general?

Excellent Very good Good Neutral Poor Very poor

3. Did you find the content of this training program useful for you in your daily practice?

Extremely useful

Somehow Useful

Not so useful

It was a waste of time

4. In terms of “user friendly” as a web-based training program, how easy or hard was it to go through the content of the program?

Very easy Easy Neutral Difficult Very difficult

5. How long did it take for you to finish the training package?

Less than 1 hour

1-2 hours

2-3 hours

3-4 hours

More than 4 hours

6. Would you recommend this web-based training program to your colleagues?

I would highly recommend it

I might recommend it

I don't know

I would not recommend it

7. Has this training program increased your knowledge in child protection?

Yes, it has increased my knowledge a lot

Yes, it has increased my knowledge a little

No, it did not added much to my own knowledge on child protection

8. What learning tool do you prefer to use for training in child abuse and neglect?

Lectures

Web-based training programs

Reading material

Video

Audio

A comment box is added at the end for any further comments.

6.13 ONE MONTH POST-TRAINING LETTER

Dear Dental Colleague,

Thank you for taking part in the PhD research project at King's College London titled 'A web-based training program in safeguarding children for dental practitioners in Saudi Arabia'. Your participation is highly appreciated and we hope it will help increase knowledge in child protection.

The final part of this research project involves completing a five minute questionnaire to assess if dental practitioners found the training package useful in their daily practice.

I am writing to ask you to consider helping us with this research by completing this short questionnaire.

The link to the questionnaire can be found here: xxxxxxx

Your participation is voluntary and no health, financial, professional, or employment risks to you are posed. Be assured that your responses are confidential and all identifiers related to you will be removed prior to data analysis.

If you have any questions or you would like to find out more about this project, please contact me on: rasha.al-dabaan@kcl.ac.uk

I appreciate your support in helping to understand important concerns that impact the dental practice and safeguarding children.

Yours faithfully,

Rasha Al-Dabaan

Department of Oral Health Services Research & dental Public Health Social and Behavioural Sciences, King's College London.

6.14 ONE MONTH POST-TRAINING PROGRAM QUESTIONS

The following questionnaire will be submitted to dental practitioners one month after taking part in the training program:

Kindly answer the following questions:

<u>As a result of the child protection web-based training, the practice (dental clinic) I work in is:</u>

1. Adopting/adopted a written child protection policy.
   Yes No N/A (non-applicable)

2. Arranging/arranged child protection training for one or more of the team.
   Yes No N/A

3. Identifying/identified a staff member to lead on child protection.
   Yes No N/A

4. No changes were done in regards to child protection.
   Yes No

<u>As a result of the child protection web-based training, I:</u>

1. Attended/will attend more courses and workshops in child protection.
   Yes No

2. Raised awareness in the dental practice about the importance of child protection.
   Yes No

3. Have been more aware of child abuse and neglect signs during my day to day dental practice.
   Yes No

4. Recognized a child abuse and neglect case.
   Yes No

5. Know who to contact to make a report
   Yes No

6. Made a report of a child abuse and neglect case.
   Yes No

7. Feel more confident about dealing with child abuse and neglect:
   Not at all more confident Slightly more confident A lot more confident

6.15 THE CHILD PROTECTION TRAINING PROGRAM IN POWER POINT FORMAT (CD)

The CD is attached to the inside cover of this thesis.

The present online format is the updated version of the training program:

www.candentist.com

6.16 CHILD PROTECTION TRAINING CERTIFICATE

KING'S College LONDON

Social & Behavioural Sciences
Kings College London

Child Protection Training Program for Dental Professionals at *www.candentist.com*

This is to confirm that XXXXXXX completed the e-learning program which is accredited for 4 hours Continuing Professional Development.

Signed:

Date: day/ month/2013

Prof JT Newton,

6.17 LITERATURE REVIEW TABLES

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Adair, Wray, McKnight Hanes, Sams, Yasrebi, Russell (1997) USA	
Materials & Sample	• Surveys were mailed to 500 GDs (members of the Georgia Dental Association) and 200 pediatric dentists (PDs)members of the American Academy of Pediatric Dentistry in the states of Georgia and Florida • 288 completed surveys; 185 from GDs and 103 PDs.
Knowledge on forms of abuse	• 2 vignettes were used in the survey; one about neglect and the other about physical abuse. • Answers related to the neglect scenario showed that 72.6% (71.9% GDs) and (73.8% PDs) considered it serious; 57.6% (57.8% GDs) and (57.3% PDs) recognized that the incident constitutes neglect/abuse. • Answers to the abuse scenario revealed that 69.8% (72.9% GDs) and (64.1% PDs) considered it serious; 31.3% (33.6%GDs) and (27.2% PDs) recognized that the incident constitutes neglect/abuse.
Suspected/Reported cases of abuse and legal issues	• 7.3% (4.8% GDs) and (11.6% PDs) believed they were required to report the neglect scenario and 33.7% (33.2% GDs) and (35%PDs) believed they were required to report the abuse scenario. • 9.7% (8.7% GDs) and (11.6% PDs) would be likely to report the neglect incident and 36% (38.2% GDs) and (32% PDs) would be likely to report the abuse incident.
Barriers	• 51.4% (54.6% GDs) and (45.6% PDs) believed that reporting the neglect scenario would have a negative impact on the child and 55.9% (57.4% GDs) and (53.4% PDs) believed that reporting the abuse scenario would have a negative impact on the child. • 70.8% (71.2% GDs) and (69.9% PDs) believed that reporting the neglect scenario would have a negative impact on the family and 74.8% (74.9% GDs) and (74.7% PDs) believed that reporting the neglect scenario would have a negative impact on the family.
Education and training	• N/A

Ramos-Gomez, Rothman, & Blain (1998) USA	
Materials & Sample	• 33 item questionnaire delivered by mail • 2005 dentists in LA: (83%) GDPs, (17%) are orthodontists, paediatric dentists, oral surgeons and other specialists
Knowledge on forms of abuse	*Knowledge of social issues related to CAN:* • CAN cases are not confined to poor families (93%). • Abused children do not tell someone soon after the abuse (84%). • Child accusation of being abused by an adult should be addressed (89%) • Most of abused children are not removed from their parents' homes (44%). *Knowledge of indicators of CAN:* • Bruises on the cheek as indicators of slapping or grabbing of the face (91%) • Strong correlation between dental neglect and physical neglect (48%) • Repeated injury to the dentition resulting in avulsed or discoloured teeth may indicate repeated trauma from abuse (83%) • Bruises that circumscribe the neck are usually associated with accidental trauma (false) (81%) • Burns in the shape of hot objects are associated with CAN (4%) • Bite marks observed on a child should be investigated as a possible indicator of child abuse (4%) • A child's psychosomatic complaint, seductive behaviour, unusual knowledge about sexual matters (76%)

Suspected/Reported cases of abuse and legal issues	• 16% suspected a case of child abuse in the last five years while 6% reported the incident. • Only 23% believed their offices had protocol for reporting. • 64% knew they are required by law to report suspected case of CAN. • 13% thought only abuse is reported excluding neglect. While 21% didn't know reporting requirements. • 59% unaware of legal consequences of failing to report suspected CAN. • 50% knew that California law grants health care professionals' immunity from civil or criminal liability when they make a good-faith report of suspected CAN. • About 65% knew that suspected cases must be reported to the designated authorities.
Barriers	• Lack of adequate history (14%) • Lack of knowledge about CAN and the health care worker's role in reporting it (6%) • Concern about the effect it might have on my practice (1%) • No time with a busy practice schedule (1%) • Did not want to get involved (1%) • Lack of confidence that reports will be investigated (1%) • Fear that the report may cause more harm than good (3%) • Have never seen a case of child abuse or neglect (71%) • Other barriers (5%)

Education and training	• Formal training while attending dental school in recognizing and reporting child abuse and neglect (28%) • Continuing education courses on child abuse and neglect (16%) • Read any literature, magazines or dental journal articles on child abuse and neglect (84%) • Received information on, instructions on or training in diagnosing and reporting suspected child abuse and neglect cases (33%) • Benefited the most from Dental school (35%) • Benefited the most from Dental organizations (21%) • Local or state programs (6%) • Continuing education courses (21%) • State or national dental meetings (4%) • Prevent Abuse and Neglect through Dental Awareness, or PANDA, Coalition training sessions (1%) • Other sources of training and education (13%)

Kilpatrick, Scott, & Robinson (1999) Australia	
Materials & Sample	• Telephone questionnaire • A total of 122 dentists; 67 dentists from the Australian Dental Association(ADA) and 55 dentists who are members of the Australian and New Zealand Society of Paediatric Dentistry (ANZSPD)
Knowledge on forms of abuse	• Physical abuse (90%), emotional abuse (51%), sexual abuse (43%), very few on neglect, & none on domestic violence.
Suspected/Reported cases of abuse and legal issues	• Suspected cases of CAN: 58 % (ADA), 24% (ANZSPD) • Reported cases of CAN: 36% (ADA), 10% (ANZSPD) • 50% (ADA) think it is legal requirement to report • 50% (ANZSPD) don't know their legal obligations
Barriers	• 72% of GPs and 41% of PDs do not know to whom report. • 75% of GPs and 80% of PDs have concern in confidentiality • 24% of GPs and 15% of PDs are unsure about diagnosis. • 43% of GPs and 38% of PDs are unsure about consequences • 28% of GPs and 8% of PDs do not claim responsibility • 28% of GPs and 22% of PDs think that knowledge and reporting of CAN do not affect their practice • 28% of GPs and 33% of PDs fear litigation
Education and training	• 64% of GPs and 76% of PDs think knowledge in CAN is important

John, Messer, Arora, Fung, Hatzis, Nguyen, et al. (1999) Australia	
Materials & Sample	• Questionnaire consisting of 16 open-ended questions conducted by person or by phone • 347 dentists (PDs = 45, endodontists = 102, newly graduates= 59, Australian dental association= 141) in Victoria, Australia
Knowledge on forms of abuse	• Emotional (83- 93%), physical (99-100%), sexual (21-40%), neglect (10-31%) • Medical signs of CAN (95 -98%), psychological signs of CAN (72-83%), oro-dental signs of CAN (29-60 %)
Suspected/Reported cases of abuse and legal issues	• Suspected cases of CAN: 54% by PDs , 46 % by the other groups of dentists • Reported cases of CAN: 23% by PDs , 2-6% by the others groups of dentists • 64% of PDs know legislations regarding CAN compared to other groups of dentists
Barriers	• 26% of all fear confidentiality • 10% of all think reporting CAN cases can have an effect on practice • 86% of all were uncertain about diagnosis of CAN • 18% of all fear litigation • 48% of all think reporting cases of CAN may affect child family • 81% of all think reporting cases of CAN may have an effect on child. • 43% of all think they are legally required to report • 74% of all fear to be called in front of the Child court
Education and training	• 79% of all request more information about CAN • 93% of all request written information on reporting procedures and legal aspects.

Bsoul, Flint, Dove, Senn, Alder (2003)	
Materials & Sample	• A 24 question survey was mailed to 1,046 Texas dentists. dentists were randomly selected from a membership roster provided by the Texas Dental Association. GDs and selected specialists (pediatric dentists, orthodontists, oral surgeons, dental • public health, periodontists and endodontists) were included. • 383 dentists responded; the majority (n=289) were GDs
Knowledge on forms of abuse	• N/A
Suspected/Reported cases of abuse and legal issues	• 50% suspected abuse; 45% GDs, 96% Pediatric dentists, 56% orthodontists and 47% oral surgeons • 25% reported at least one case to authorities; 22% GDs, 79% pediatric dentists, 24% orthodontists, 18% oral surgeons • 84% believed the legal obligation is to report suspected cases of child abuse
Barriers	• 58% lack of adequate history • 28% lack of knowledge about abuse and dentists role in reporting • 6% concerns about effect on practice
Education and training	• N/A

Welbury, MacCaskill, Murphy, Evans, Weightman, Jackson, et al. (2003) UK	
Materials & Sample	• Focus group method using structured interviews • 5 groups of GPs (N=23 ,12 female, 11 male)
Knowledge on forms of abuse	• Newly graduates had more knowledge in types of abuse compared to dentists with longer experience • Knowledge in sexual, emotional abuse and neglect was not clear
Suspected/Reported cases of abuse and legal issues	• No reporting but some concerns only • Not much knowledge on who and how to report child abuse
Barriers	• Difficulty in identifying physical abuse especially with children • Fear of outcome on child and parents • Lack of certainty about suspected signs of abuse, who and how to report • Feelings of isolation from social workers/health providers
Education and training	• Not mentioned in the study. However, there are some key points suggested (p.49) by the authors to improve GDPs perceptions of their role in recognizing and reporting CAN.

Russell, Lazenbatt, Freeman & Marcenes (2004) UK	
Materials & Sample	• 979 postal questionnaires were delivered to primary care professionals (nurses, doctors and dentists) • 431 primary care professionals responded; 133 were doctors, 147 dentists and 139 were nurses and health visitors (12 were missing)
Knowledge on forms of abuse	• Nurses scored the highest in recognizing signs and symptoms of abuse and to get involved in detecting abuse while dentists scored the lowest for recognizing child physical abuse.
Suspected/Reported cases of abuse and legal issues	• 58% of participants saw a suspected case of CAN • 47% of participants reported a suspected case of physical abuse • 10% of participants reported abuse in the last 6 months • In the last 6 month 64 cases of suspected abuse were seen • 31 participants (mostly dentists) saw oro-facial trauma in the last 6 months • 86% of doctors, 96% of nurses and heath visitors and 38% of dentists knew how to report a suspected abuse case • Doctors saw more suspicious cases of CAN, nurses scored the highest in reporting abuse, dentists scored the lowest.
Barriers	• misdiagnosis and fear of confronting the family and hostility • Adverse effect towards the child and family • Lack of clear protocol for reporting abuse • Inexperience, poor skills and lack of training • Concern about insufficiency and lack of sensitivity of social services • Lack of time • Fear of litigation
Education and training	• 77% of participants want training in how to report suspected CAN • 95% of participants felt that training in CAN detection and reporting should be included in vocational training

Cairns, Mok, & Welbury (2005a) Scotland	
Materials & Sample	• Postal questionnaire • 375 GDPs from 15 health boards in Scotland
Knowledge on forms of abuse	• 59% of GDPs thought dental team are well placed to recognize CAN • 2% of GDPs knew lead clinician for child protection in their area
Suspected/Reported cases of abuse and legal issues	• Suspected cases of CAN: 29% of GDPs suspected CAN during their career, but only 56% of them documented observations in clinical notes • Reported cases of CAN: 8% of GDPs reported their concern • 81% of GDPs would prefer to discuss with colleague
Barriers	• 11% of GDPs concerned that referral impacts practice • 34% of GDPs feared family violence to child • 31% of GDPs feared family violence to dentist • 48% of GDPs fearful of litigation (younger and female respondents significantly more concerned about these factors) • 52% of GDPs feared that statutory agencies' intervention would impact child • 71% of GDPs lacked knowledge regarding referral procedures • 88% of GDPs lacked knowledge of certain diagnoses
Education and training	• 94% of GDPs thought dentists have inadequate information about child protection • 19% of GDPs recall CAN training as part of formal undergraduate lecture (female recall significantly higher than males) • 16% of GDPs had postgraduate training • 85% of GDPs received training in form of lectures • 10% of GDPs received local guidelines, and 5% saw them • 78% of GDPs request further training on how to recognize and report CAN, and 87% of them think it should be part of a vocational training.

Thomas, Straffon, & Inglehart (2006) USA	
Materials & Sample	• Self-administered questionnaire with both multiple formats of questions (e.g, true/false, open-ended) • 233 dental students (116 male,117 female) and 76 dental hygiene students at the School of Dentistry, University of Michigan , USA
Knowledge on forms of abuse	• 7.7 % of the senior dental students and 16.7 % of the senior dental hygiene students defined abuse correctly • 78.3 % of the senior dental students and 76.9 % of the senior dental hygiene students defined abuse correctly, but with partial answers • About 20 % of senior dental students and 17 % of the graduating dental hygiene students did not define dental neglect. • All of dental and dental hygiene students had the lowest percentage (3.42 % and 3.45% respectively) of correct answers related to signs of physical abuse.
Suspected/Reported cases of abuse and legal issues	• Legal knowledge: 79.5% of senior dental students & 80% of dental hygiene students know when to report, 20.5% & 0% know where to report, 59% & 46.7% know penalty for not reporting. • Though material about child abuse/neglect is included in the curricula , dental and dental hygiene students seemed to lack the level of competence that allows them to act professionally when they encounter child abuse/ neglect during their professional activities
Barriers	• N/A
Education and training	• 100% of all seniors received information on CAN in classroom; whereas 41% of dental students & 46.7% hygienist students received it in clinical settings.

Lazenbatt & Freeman (2006) Northern Ireland	
Materials & Sample	• Postal questionnaire with both structured and open-ended questions • A total of 419 individuals responded to the questionnaire: 139 (33%) Community Nurses (CNs), 147 (35%) General Medical Practitioners (GMPs) and 133 (32%) GDPs.
Knowledge on forms of abuse	• Lower percentage of GDPs (18%) compared with CNs (44%) and GPs (38%) stated that they knew the mechanisms for reporting child physical abuse (CPA) • Compared to GPs and CNs , GDPs had the lowest scores on the ability to identify CPA.
Suspected/Reported cases of abuse and legal issues	• Suspected cases of CAN: 60% of all groups had seen at least one case suspicious of CPA, 155 were suspicious of CPA in their caseloads in the previous 6 months • Reported cases of CAN: 47% of all groups had reported suspicious cases to authorities in their professional lives, 10.5% of participants identified a definite case of abuse within previous 6 months, and about 10% of them have reported these cases to authorities.
Barriers	• Fear of misidentification and its consequences were mostly reported as barriers to take actions among GMPs and GDPs • Uncertainty when reporting CPA , the lack of guidelines and protocol were cited as barriers among all the three groups • Challenges to reporting CPA include: lack of sensitivity and support of social services and colleagues , workload pressures, and complex reporting procedures • Lack of knowledge due to deficiency in multidisciplinary workshops, in-service education and accessible training tools
Education and training	• 77% of all groups stated that they required further training, as they were uncertain of all the mechanisms for reporting suspicions cases of CPA • 99% stated that the identification and reporting of suspected child abuse cases should be included as part of vocational training courses for healthcare professionals.

Manea, Favero, Stellini, Romoli, Mazzucato, & Facchin (2007) Italy	
Materials & Sample	• A questionnaire was conducted in person and included 4 sections: 1) demographic information, 2) 10 statements regarding the dentist's perception, attitude, knowledge about CAN, 3) 3 simulated photos of cases to be compared with actual cases of CAN, and 4) both open-ended and closed questions about practitioners' personal experiences with CAN, their personal skills in confronting it, and their interest in enhancing personal knowledge on the subject. • A total of 106 individuals (67 males, 39 females) agree to participate: 11 were senior dental students at Padua University, Italy, and 95 were professionals ; 40 graduated from medicine, 54 from dentistry and one in both faculties.
Knowledge on forms of abuse	• 22 % of all groups thought that CAN is one of the most relevant cause of paediatric mortality • 62 % of all groups thought that CAN prevalence was higher than Down syndrome prevalence • 88% of all groups agreed that dentists must protect child's health • 58% of all groups believed that they can detect CAN during their clinical practice • 73 % of all groups had the belief that neglect is not a kind of maltreatment • 50% of all groups agreed that CAN is mostly due to a low socio-economical level • 15 % of all groups agreed that 10% of CAN lesions are on head, face and neck, and 39% of all groups agreed that palatal spots can be signs of physical and sexual abuse. • 9% of all groups thought that paedodontists are the only professionals who have to report suspect cases of CAN.

Suspected/Reported cases of abuse and legal issues	• Suspected cases of CAN: 17 professionals and 3 undergraduate students reported having suspected some cases of abuse during their practice. Out of these 20 , 13 dentists claimed to have suspected not more than 1 or 2 cases, 4 dentists claimed to have seen no more than 5, and 3 dentists claimed to have seen abused children many times • Reported cases of CAN: Only 3 professionals indicated having contacted social workers for the sake of the child's health and security and reported their suspicions to authorities. 20% of all groups said that they do not know how to act or that they do not consider themselves able to act; 38% said they would turn to social workers, the police, the child's pediatrician or other colleagues; and 17% claimed that they would speak with the parents regarding the family background Legal issues: 4% of all groups have knowledge of medical and legal procedures, and only 5% would reappoint the child to see how the situation occurred.
Barriers	• Most important barriers are education and the female gender of the professional • General lack of education about CAN.
Education and training	• Almost all dentists (91%) have never attended CAN classes • Only 3 dentists had lectures on the topic during their medical studies, while 5 dentists acquired information about CAN in postgraduate training, private classes, or classes at a non-medical university. These 8 dentists were able to identify the 3 simulated cases and reported that they had seen at least 1 case during their practice • 83% of professionals admitted the need to improve their knowledge of CAN.

Al-Habsi, Roberts, Attari, Parekh (2009) UK	
Materials & Sample	• Postal questionnaire • GDPs (N=82) & specialists and consultants (N=23) were randomly selected from 5 areas in London, UK
Knowledge on forms of abuse	• All agree that fraenum laceration and tooth fracture are signs of abuse • 62.5% of specialists , 57% of consultant, and 13% of GDPs agree dental caries is a form of abuse by neglect • Consultants & specialists had the highest level of knowledge in detecting key factors of abuse • 72% of GDPs, 94% of specialists , and 71% of consultants felt that dentists have a the best position to recognize child abuse
Suspected/Reported cases of abuse and legal issues	• Suspected cases of CAN: 15% of all dentists saw at least 1 or more suspected cases in last 6months • Reported case of CAN: 6% of all groups reported cases. • Legal issues: All consultants, 62.5% specialists, 46% GDPs would refer suspected cases to social services. 86% of consultants. preferred discussing cases with colleagues opposed to reporting to police.
Barriers	• Reasons for GDPs not referring included: fear of impact on practice (13%); fear of violence to child (84%); fear of litigation (35%); fear of family violence against them (33%); fear of consequences to the child (72%); lack of knowledge regarding the procedures for referral (86.5%); and lack of certainty about the diagnosis (86.5%) • 50% of specialists were uncertain about diagnosis, and 19% of them fear of violence toward the child • Similar results were obtained from the consultants
Education and training	• All consultants and specialists, and 80% GDPs felt topic of CAN is extremely important • 79% of GDPs, 50% of specialists, and 71% of consultants wanted information and training in this topic.

Harris, Elcock, Sidebotham, & Welbury (2009a) UK	
Materials & Sample	• Self-administered postal questionnaire based on the previously used one by Cairns, Mok, and Welbury (2005) • A total of 490 professionals: GDPs (N=55), Salaried service dentist (N=286), hospital/academic dentist (N=162), dental care professional (N=27), and 2 of other types
Knowledge on forms of abuse	• 94% agreed that dental team are well placed to recognize signs of child abuse.
Suspected/Reported cases of abuse and legal issues	• Suspected cases of CAN: 67% of all groups suspected CAN; whereas 15.9% of all groups suspected 3 or more cases in last 5 years. Those with post qualification training had more suspected cases (70.8%) compared to those who did not have such training. 82% of those who had suspected cases of CAN saved the related findings in medical records; whereas 32% of those who had suspected CAN did not refer such cases. 87% of all groups agreed to discuss the suspected cases with dental colleagues.
Barriers	• 78% of all groups thought lack of certainty about diagnosis; 53% of all groups fear of violence to child; 52% of all groups fear from statutory agency intervention on child; 35% of all groups have concerns about confidentiality, 32% of all groups fear family violence to dentist, 29% of all groups fear litigation, and 4% think that reporting cases of CAN has impact on practice 4%.
Education and training	• 26% of all groups had child protection training UG level (mostly females & newly graduates); 87% had post qualification training (mostly PDs and females); 24% had post qualification training as single lectures; 33% had multiagency training; and 80% need further training. post-qualification child protection training was associated with significantly more suspecting abuse.

Harris, Elcock, Sidebotham, & Welbury (2009b) UK	
Materials & Sample	• Self-administered postal questionnaire based on the previously used one by Cairns, Mok, and Welbury (2005a) • A total of 490 professionals: GDPs (N=55), Salaried service dentist (N=286), hospital/academic dentist (N=162), dental care professional (N=27), and 2 of other types.
Knowledge on forms of abuse	• N/A
Suspected/Reported cases of abuse and legal issues	• 81% of participants saw children with neglected dentition once a week or more frequently • 59.9% of participants saw children with neglected dentition once daily or more often • 6.6% of participants saw children with neglected dentition less frequently than once a month • As for actions taken by dentists: always or sometimes explain concerns to parents (100%), give advice on preventing dental disease (100%), record findings (99.6%), treat pain and infection (98.9%), review progress (97.5%) and set targets for improvement (90.1%). • 57.7% of respondents always or sometimes discuss the case with other health professional, 7.4% make a child protection register enquiry and 4.1% refer to social services.
Barriers	• N/A
Education and training	• 90.9% of those with previous training would discuss with other health professional vs 68.6% with no training • 39.7% of those with previous training would make a child protection register enquiry vs 7.8% with no training • 29.8% of those with training would refer to social services vs 8% with no training

Chadwick, Davies, Bhatia, Rooney, & McCusker (2009) UK	
Materials & Sample	• Postal questionnaire which was based on the a previous study by Cairns, Mok, and Welbury (2005) • 396 of practicing dental therapists (DTs) in the UK who have been registered with the General dental Council (GDC) in 2007 working in England (N=330), Wales (N=38), Scotland (N=22), Northern Ireland (N=5), and 1 DT in both England and Wales.
Knowledge on forms of abuse	• N/A
Suspected/Reported cases of abuse and legal issues	• Suspected cases of CAN: 34% of DTs suspected child abuse in 1 or more cases. The longer the experience, the more likely to suspect a case. Those receiving postgraduate (PG) training were more likely to suspect CAN • Reported cases of CAN: 83% of those suspecting CAN recorded in notes; while 18% of DTs who suspected did not report their cases. 48% of DTs prefer to discuss case with a principle dentist or colleague; while 41% prefer to discuss it with a paediatric colleague • Legal issues: 27% of DTs prefer to report cases to social services, 7% would refer it to the police, and 7% of DTs would refer it to the NSPC.
Barriers	• 70% of DTs lack certainty in diagnosis;61% fear of family violence towards child; 28% worried about family violence towards dentist; 52% fear for child from statutory agency; 39% lack knowledge of referral process ; 31% fear of litigation; and 2% DTs fear the impact of reporting CAN on practice.
Education and training	• 37% of DTs recalled undergraduate training in child protection • 61.1% of DTs with10 years & less of experience had undergraduate (UG) training ; whereas 43% of them had PG training • 44% of DTs with 10-19 years of experience had UG training ; whereas 68% of them had PG training • 15.7% of DTs with 20-29 years of experience had UG training ; whereas 77.1% had PG training • 5.7% of DTs with 30 years of experience had training in UG; 98.5% had PG training; and 68% welcome any further training.

Owais, Qudeimat, & Qodceih (2009) Jordan	
Materials & Sample	• Postal survey included 36 questions divided into 3 sections: 1) demographic information (8 questions); 2) 7 multiple choice questions about reporting case of CAN and 12 yes/no/I don't know questions about suspecting cases of CAN; and 3) 9 questions about knowledge regarding the recognition of types of child abuse, as well as indicators of physical child abuse • A total of 342 dentists : GDPs (N=253) and specialists (N=89)
Knowledge on forms of abuse	• 97% of both groups can identify physical abuse; 92% can identify sexual abuse; 84% can identify emotional abuse and neglect. • Indicators of CAN: 88 % of both groups can recognize bruises on the cheek , burns in the shape of hot objects (84%) , bite marks (83%), avulsed or discoloured teeth (62%), and bruises circumscribing the neck (49%). • 70% of both groups were able to identify cases; 24% were not confident, and 6% were unable to identify CAN
Suspected/Reported cases of abuse and legal issues	• Suspected cases of CAN: 42% of both group suspected cases in last year • Reported cases of CAN: 20% of both groups reported cases out of suspected cases, out of all only 9.6% reported cases. • Legal issues: 95.5% of dentists who believe they had no legal obligation did not report; 71% believed they had legal obligation to report, and 80% believed it is ethical to report; 17% would never report. Some dentists would report to family protection department • (33%), to the police (22%) and to direct superior (28%).
Barriers	• 76% of dentists thought that lack of child history would affect their decisions to report • 73% dentists were uncertain about signs and symptoms of CAN • Some dentists feared consequence to child (66%), effect on child family (52%), hostility of family to dentist (49%), and litigation (28%) • Some were concerned about confidentiality (50%), unsure about consequences of reporting (48%) • Some dentists were concerned about the availability of time (41%), absence of legal obligations (32%), and the effect of reporting CAN on their practice (31%) • 22% thought that it is not dentist responsibility to report cases of CAN
Education and training	• N/A

Uldum, Christensen, Welbury, & Poulsen (2010) Denmark	
Materials & Sample	• A Danish version of the postal questionnaire used in the study by Cairns, Mok, and Welbury (2005a) • A total of 1145 respondents: Dentists (N=851) , dental hygienists (N=235), and 59 respondents with no information about their specialization
Knowledge on forms of abuse	• N/A
Suspected/Reported cases of abuse and legal issues	• Suspected cases of CAN: 38.3% of all groups suspected cases in whole career; 65.8% suspected 1-5 cases; 14% suspected cases in last 6 months; 6.8% were certain of cases of CAN. Dentists in municipal dental service (MDS) have significantly the highest number of suspected cases. • Reported cases of CAN: No statistically significant differences were found in the reporting of suspicion between dentists and dental hygienists. However, suspicion being reported most frequently by respondents employed in MDS. • Legal issues: Almost all would prefer to discuss with colleagues or social services, 50% would discuss with parents (mostly MDS); and dentists in the private practice were the highest to report to police
Barriers	• 80% of all groups were uncertain about observation , 60% feared family violence towards child around, 60% lacked knowledge of referral procedures , 55% fear on child of authority intervention, 15% had concerns about litigation, 10% feared violence on own family, and less than 10% thought reporting CAN case would affect their practice.
Education and training	• 8.7% of all groups received local area child protection guidelines; 75% expressed need for further education in signs and symptoms of CAN and referral procedures; 95.7% thought that dentists and hygienists are inadequately informed about their role in child protection; and 88% thought child protection guidelines should be included in UG dental curriculum.

Al-Jundi, Zawaideh, & Al-Rawi (2010) Jordan	
Materials & Sample	• Self-administered questionnaire distributed by hand • A total of 441 respondents (83% UG dental students, 13% PG dental students) from 2 dental schools in 2 Jordanian Universities
Knowledge on forms of abuse	• Knowledge of social indications of child abuse: 38.6% of UG students and 48.3% of PG students agreed that CAN is not primarily associated with stresses of poverty. 74.1% of UG students and 69.0% of PG students agreed that children who have been abused never tell someone soon after the abuse. 67.4% of UG students and 69.0% of PG students agreed that if a child readily states that an adult has caused harm, the accusation should be addressed. 56.9% of UG students and 60.3% of PG students believed that CAN may be indicated if a parent delays seeking medical attention. • Knowledge of signs of physical abuse: only 8.1% of UG students agreed that bruises on the cheek may indicate slapping or grabbing of the face; 14.6% of UG students and 5.2% of PG students indicated that additional bruises never occur in areas overlying bony prominences; 19.8% of UG students and 17.2% of PG students agreed that a strong correlation does not exists between dental neglect and the presence of physical neglect; 15.1% of UG students and 22.4% of PG students indicated that repeated injury to the dentition resulting in avulsed or discoloured teeth may indicate repeated trauma from abuse; 25.0% of UG students and 20.7% of PG students agreed that bruises that circumscribe the neck are usually associated with accidental trauma; 8.1% of UG students and 8.6% of PG students indicated that burns in shape of hot objects are often associated with many child abuse cases; and 6.5% of UG students and 3.4% of PG students agreed that bite marks observed on a child during the normal course of a dental visit should be investigated as a possible sign of child abuse.

Suspected/Reported cases of abuse and legal issues	• 32.4% of UG students and 39.7% of PG students would refer cases of CAN to the Family Protection Department; some (8.1% UG students, 12.1% PG students) would refer to the local police; only 1.8% of UG students would refer to the nearest hospital ; and 57.7% of UG students and 48.3% of PG students do not know where to report such cases • 16.7% of UG students and 25.9% of PG students agreed that dentists are legally required to report child abuse and neglect in Jordan • 65.8% of UG students and 60.3% of PG students indicated that dentists should be legally responsible to report child abuse; and 90.1% of UG students and 86.2% of PG students viewed dentists as having an ethical duty to report child abuse.
Barriers	• N/A
Education and training	• Source of information on child abuse: 82.7% of UG students and 74.0% of their PG peers indicated that their dental school is their source of information about CAN; 35.5% of UG students and 58.6% of their PG peers said that they acquire information about CAN from dental journals and literature; 22.7% of UG students and 10.3% of their PG peers reported benefits continuing education courses; and a few of them reported benefits from national dental meetings and conferences (0.8% of UG students and 3.6% of their PG peers, respectively) • 19.8% of UG students and 25.9% of their PG peers indicated that they received enough formal training in recognizing and reporting CAN.

DeMattei & Sherry (2011) USA	
Material & Sample	• A 17 item survey was developed and administered to 125 dental hygiene students studying at a Midwestern US dental hygiene program. • 67 students were included in the study
Knowledge on forms of abuse	• N/A
Suspected/Reported cases of abuse and legal issues	• 98.5% of students either strongly agreed or agreed that individuals in the field are mandated to report CAN • 97% of students either strongly agreed or agreed that professionals failing to make a report when child abuse or neglect is suspected may allow that child to be continuously injured. • 77.6% of students either strongly agreed or agreed that if they saw signs of abuse on a child and did not report them, then suspected that the child died as a result of the abuse, they would immediately report suspicions • 82.1% of students either strongly agreed or agreed that when a person knowingly transmits a false report, they shall be guilty of crime. • 55.2% of students either strongly agreed or agreed that failure to report suspicions of abuse or neglect could result in a crime. • 4.5% strongly agreed or agreed that he or she must give his or her name when reporting suspicions of child abuse or neglect • 92.5% of all students strongly agreed or agreed that health professionals should be required to report suspicions of child abuse and neglect

Suspected/Reported cases of abuse and legal issues	• Willingness to report were assessed using the following scenarios; 1. 89.6% of students would definitely or probably report a mother who slapped a two-year-old causing bruising. 2. 92.5% of students would definitely or probably report a five-year-old child with oral syphilis lesion 3. 100% of students would definitely or probably report an intoxicated patient who admits molestation of thirteen-year-old daughter 4. 52.2% of students would definitely or probably report a mother of seven-year-old asthmatic child who admits she is unable to afford medication. 5. 83.6% of students would definitely or probably report a situation when there is knowledge that a four-your-old child is left home alone repeatedly. 6. 94% of students would definitely or probably report a father repeatedly spanking son in office storage closet 7. 79.1% of students would definitely or probably report a female patient who reveals being molested by her father who is now married to a woman with two young children.
Barriers	• N/A
Education & Training	• 83% of students strongly agreed or agreed that in service training on child maltreatment was required. • 95.5% of students strongly agreed or agreed that they should become more familiar with local state laws and the legal definitions of child maltreatment in order to understand legal obligations • 89.6% of students strongly agreed or agreed they were adequately prepared to recognize signs and symptoms of CAN.

Newcity, Ziniel & Needleman (2011) USA	
Materials & Sample	• An e-mail invitation with the web-based survey was sent to 3,451 members of the Massachusetts Dental Society • 678 dentists responded. general practitioners (68.7%), paediatric dentists (8.1%) and maxillofacial surgeons (N = 76).
Knowledge on forms of abuse	• N/A
Suspected/Reported cases of abuse and legal issues	• 1.9% of 4,905 cases of oro-facial trauma in children seen by dentists in the last 12 months are suspicious of abuse. • Younger dentists, dentists treating a larger number of children, dentists that see more patients of the low to middle socio-economic status, and those who see more trauma cases are more likely to see definitive cases of both child abuse and neglect • Maxillofacial dentists were more likely to suspect cases of abuse • 21.5%t of the 93 cases of suspicious CAN were reported • Dentists that see more oro-facial trauma, and those with legal awareness about their responsibility and dentists with postdoctoral education in CAN were more likely to report suspected abuse • 6 dentists saw 36 cases of definite abuse, 57.1 of these cases were not reported • 13% of participants saw at least one case of child neglect in the last year. A total of 239 cases of neglect were seen and 59% of these dentists did not report it. Dentists who were more likely to report cases of child neglect included: those that treat higher numbers of children in their practices, those seeing a higher percentage of oro-facial trauma cases and having read CAN continuing education materials (strongest predictor). • 90% of participants were aware of their legal responsibility towards reporting CAN and only 66.5% correctly named the agency to which CAN is reported to

Barriers	• Lack adequate history of abuse (76%) and neglect (43.3%) • 38% of participants felt that the history could justify the injury • Lack knowledge in reporting procedures for abuse in third of the participants and 16.7% for neglect • Lack of knowledge about abuse in 9.5% of participants and 10% for neglect • Fear over the dentist practice (9.5% for abuse) and 3.3% for neglect
Education and training	• 50.8% of participants had pre-doctoral training in CAN (mean graduation year was 1993) • 52% of participants had training after finishing dental school, Can training was included in 44.7% of postdoctoral programs (mean graduation year was 1988 and 1987 respectively). • 77% of participant read literature about CAN • 34% of participants attended continuing education courses on CAN • 60% of participants received written information about CAN from the Massachusetts Dental Society • 24% of participants attended a Massachusetts Dental Society continuing education course on CAN • 6% of participants saw an educational video about CAN • 15% of participants received written information about CAN from different sources • 51.3% of participants felt they need more training in detecting and reporting CAN

Sonbol, Abu-Ghazaleh, Rajab, Baqain, Saman, & Al-Bitar (2012) Jordan	
Materials & Sample	• A structured questionnaire adapted from 2 previous studies: Ramos-Gomez, Rothman, & Blain (1998) and Lazenbatt & Freeman (2006). It was distributed to Jordanian dentists during the Jordanian Dental Association Council election meetings • A total of 256 respondents: GDPs (N=208) and specialists (N=48)
Knowledge on forms of abuse	• Knowledge in social indicators of CAN: 29% of all groups indicated that abused children often tell someone soon after abuse; 96% of all groups agreed that if a child accuses an adult of abuse it should be addressed ; 57% of all groups thought that CAN occur mostly in low socioeconomic level not in middle or high; 71% of all groups indicated that the abuser is someone the child knows well ; and 56% of all thought that the best way to deal with suspected abuse is confront parents • Knowledge of physical indicators of CAN: bruised bony prominence (35%); repeated dental trauma (60%); burns (67%); bite marks (88%)
Suspected/Reported cases of abuse and legal issues	• Suspected cases of CAN: 50% of all dentists suspected abuse, but only 12% reported their suspicions. 77% all dentists who had suspected abuse at some point in the past 5 years had decided not to refer the child
Barriers	• 43% of all feared of anger from parents(47%GDPs, 29% specialists) • 41% of all lacked knowledge of referral (44% GDPs, 29% specialists) • 41% of all were uncertainty about diagnosis (43%GDPs, 33% specialists) • 20% of all lacked adequate history of cases (22%GDPs, 14% specialists) • 19% of all feared possible effect on child's family (19%GDPs, 19% specialists) • 19% of all had no legal obligation or authority toward reporting cases of CAN (21% GDPs, 14% specialists) • 12% of all thought that reporting would affect practice (12%GDPs, 14% specialists) • 10% feared litigation (9%GDPs, 14% specialists)

Education and training	• Source of information on child abuse: 34% of all said that their dental school is their source of formal training about CAN; 60% of all indicated that they acquire information about CAN from dental journals and literature; 41% of all reported benefits from postgraduate training. • 67% of all considered it important to have post-qualification training and courses in recognizing and reporting CAN

Azevedo, Goettems, Brito, Possebon, Domingues, Demarco, Dias Torriani (2012) (Brazil)	
Materials & Sample	• A questionnaire consisting of 48 closed ended items were distributed to addresses listed via dental students • 276 dentists' address and telephone numbers were obtained from a list of dentists practicing in the city of Pelotas in 2009 from the local Board of Dentistry and 187 surveys were returned.
Knowledge on forms of abuse	• N/A
Suspected/Reported cases of abuse and legal issues	• 78.7% of participants believe they are able to recognize a suspicious case of CAN • 14.3% recognized a suspicious case of child abuse or neglect in the dental office. Dentists working at University were more likely to suspect CAN cases • 24% of participants suspecting CAN made a report
Barriers	• N/A
Education and training	• N/A

Losso, Marengo, El Sarraf, Baratto-Filho (2012) Brazil	
Materials & Sample	• A 17 item questionnaire was sent to all endodontists subscribed as specialists at the Regional Dentistry Council of the State of Paraná • Out of the 248 surveys sent, 56 were returned.
Knowledge on forms of abuse	• Signs of child abuse most mentioned by 48% of endodontists (n=27):hematoma (48%), behaviour changes (48%), followed by burn marks; edema; bruises; fractures; bites and other signs were below 20% • Oro-facial lesions caused by abuse most cited by 27% of participants included face injuries, dental injuries, tooth avulsion, mouth lesions
Suspected/Reported cases of abuse and legal issues	• 41% of participants were able to recognize CAN • 61% of participants agreed that reporting CAN is required • 30% of participants knew to whom to report CAN • 18% of participants reported suspicious cases of CAN • 3.5% of participants reported abuse to the competent authorities
Barriers	• N/A
Education and training	• 93% professionals stated they had little information • Only 1 participant attended a seminar on the subject in the last year

El Sarraf, Marego, Correr, Pizzatto, Losso (2012) Brazil	
Materials & Sample	• A 17 item questionnaire was mailed to dentists registered in the Regional Dental Council of Paraná as specialists in pediatric dentistry and who worked in Curitiba in 2009 • 69 questionnaires were returned out of 212 surveys sent.
Knowledge on forms of abuse	• Signs of abuse most often mentioned were: bruises on the body (61%); behavioral changes (53%) and burn marks (20%). • Responses to the question about perceptions of oro-facial injuries associated with child abuse showed that (17%) of pediatric dentists mentioned lesions on these regions, most commonly cited were facial injuries.
Suspected/Reported cases of abuse and legal issues	• The youngest age group (1-8 years since graduation) was significantly more likely to report cases than the group with more than 18 years since graduation. • 55% of participants were able to recognize CAN • 73% of participants agreed that reporting CAN is required • 36% of participants examined suspected cases of CAN • 12% of participants who suspected abuse, reported it • 98% of participants knew which institution to report to • 37% of participants would investigate the child, 34% would report the case to the child protection agency, 24% would talk to the parents and 5% would report to the police
Barriers	• N/A
Education and training	• 88% professionals stated they had little information • 22% of participant attended a seminar on the subject in the last year

Jordan, Welbury, Tiljak, Cukovic-Bagic (2012) (Croatia)	
Materials & Sample	• A questionnaire was distributed to 726 students in all 6 undergraduate and graduate classes. • A total of 544 respondents
Knowledge on forms of abuse	• 94.7% correct answer to bruises on the cheek may indicate slapping or grabbing of the face. • 84.7% correct answer to repeated injury to the dentition resulting in avulsed teeth or discoloured teeth may indicate repeated trauma from abuse. • 60.2% correct answer to bruises noted around the neck are usually associated with accidental trauma. • 60.7% correct answer to burns are noted in many child abuse cases, and they may have the shape of a heated object. • 54% correct answer to bite marks noted on a child's neck or less accessible areas should be investigated, as bite marks are frequently a component of child abuse. • 44.9% correct answer to a strong correlation exists between dental neglect and presence of physical neglect. • 55.2% correct answer to accidental injuries usually occur in areas overlying bony prominences • 38.1% correct answer to oro-facial trauma is found in 50-75% of children with diagnosed physical abuse. • 42.8% correct answer to injuries to the ears, sides of the face and neck, and tips of shoulders are more often caused by accidents during child play and everyday life. • 97.8% correct answer to emotional abuse consists of continual insulting of a child, name calling, shaming, and mocking in the presence of others. • 90.4% correct answer to the abuser is most commonly a stranger to the child • 41.9% correct answer to psychosomatic complaints by the child may indicate a problem relating to sexual abuse • 33.1% correct answer to seductive behaviours by a child toward the dental staff may be indicative of prior sexual abuse of a child • 60.5% correct answer to a child's failure to make eye contact and respond to dental staff may be a sign of sexual abuse • 46.7% correct answer to petechial haemorrhaging, erythema, vesicles, and lesions on the child's oral mucous membrane can point to oral sex and sexual abuse.

Knowledge on forms of abuse	• 77.4% correct answer to failure of the parents to follow through with dental treatment once they have been informed about a child's rampant caries may be considered child neglect.
Knowledge on forms of abuse	• 60.9% correct answer to child abuse and neglect are primarily associated with the stresses of poverty and rarely occur among middle- or high-income earners • 83.1% correct answer to children who have been abused usually tell someone soon after the abuse • 80.5% correct answer to if a child readily states that an adult has caused harm, the accusation should be addressed • 63.2% correct answer to child abuse may be indicated if a parent describes a child's injury as a self-inflicted injury. • 52% correct answer to child abuse may be indicated if a parent reports a child's injury as a sibling-inflicted injury • 88.4% correct answer to child abuse may be indicated if a parent delays seeking medical attention for a child's injury.
Suspected/Reported cases of abuse and legal issues	• Response to knowledge about legal responsibilities towards reporting CAN was: • 61% according to the law, a dentists is obliged to file a report in all cases suspicious of CAN • 58.6% A dental medicine doctor can file a report to social services, the police, or the appropriate state attorney's office • 58.5% If a dentist does not report abuse of a child of which he/she learned while performing his duties, he/she can be issued a monetary fine or sentenced to up to 3 years in prison
Barriers	• N/A
Education and training	• Mandatory course is given as a one hour lecture covering dental neglect by Pediatric and Preventive Dentistry in 4th year. • Elective courses given to : • first year students as Sociology of the Dental Profession (mentioned from sociological point of view only) • Third year students as Oral Hygiene (mentioned from oral hygiene point of view) • Fourth year students as CAN (15 hours covering all aspects of CAN)

Drigeard, Nicolas, Hansjacob &Roger-Leroi (2012) France	
Materials & Sample	• A self-administered questionnaire on abuse in general was sent by post to general dental practitioners working in the Department of Puy-de-Doˆme (n=418). Orthodontists, maxillofacial surgeons practising in clinics, hospitals or private offices, National Health consulting practitioners and dentists on extended sick leave were excluded. • 228 dentists participated in this study
Knowledge on forms of abuse	• Physical, psychological and sexual abuse were the most cited as types of abuse and neglect. Financial abuse is the least cited. • 80.3% of participants felt concerned and affected by the topic of abuse and neglect • 80.7% of participants believe that all levels of society are affected by abuse and neglect, and 19.3% felt that the most discriminated against population were effected the most • 5.7% of participants had a specific approach when dealing with suspected abuse
Suspected/Reported cases of abuse and legal issues	• 36% of participants had a definitely saw abuse cases in their practice • 48% of participants suspected abuse; children were 30% of the cases and the majority of victims were women • 59.2% of participants who encountered abuse followed up the patient in next appointments to see if they found help • Practitioners who encountered abuse are more confident in reacting to it compared to those who never encountered a case • 23.7% can refer a victim of abuse • 2.2% knew how to contact battered child support • 80.7% thought that dentists had a role in detecting and preventing abuse

Barriers	• 59.8% lack knowledge and skills • 53.3% not aware of the impact their intervention has on the patient • 49.3% did not know their rights and obligations • 10.5% fear over their practice or personal life • 8.5% not the dentist's role • 2.8% no time
Education and training	• 93.9% never had any formal training • 9.6% felt competent in detecting abuse • 50.3% felt they were absolutely not able to detect abuse • 75.9% wish they had more information on hot to detect and prevent abuse

Harris, Welbury and Cairns (2013) UK	
Materials & Sample	• A postal questionnaire (Cairns et al, 2005) was sent out to 1,215 GDPs in Scotland in 2010 • 628 Scottish GDPs responded to the survey.
Knowledge on forms of abuse	• 77% of participants believe that abused/neglected children are more prone to caries • Factors that are concerning for the practitioner are: irregular attendance (57% training) (38% no training) failure to complete treatment (53% training) (32% no training) returning in pain at repeated intervals (55% training) (38% no training) requiring repeat GA for extractions (47% training) (34% no training)
Suspected/Reported cases of abuse and legal issues	• 37% of participants suspected CAN in one or more of their patients and 94% of them had some form of training in CAN • 11% of participants made a referral of suspected CAN case; 96% of them had formal CAN training • 6% of participants saw a definite case of CAN in last 6 months • 81% of participants suspecting CAN recorded their findings in the patient's medical records • When suspecting abuse,84% would rather first discuss the case with a colleague then 60% would refer to the Child Protection (CP) advisor however only 31% knew who the CP advisor was, followed by social worker (15%), pediatric dental colleague (14%), police (3%) and other was 8% including general medical practitioner.

Barriers	• 74% lack of certainty about diagnosis • 52% fear of violence to child • 46% fear consequences to child from statutory agencies • 43% lack of knowledge in referral procedures • 35% fear of litigation • 31% fear of violence to GDP • 6% concerns of impact on practice
Education and training	• 29% of participants received formal undergraduate training in child protection. Participants were less likely to receive undergraduate training with increasing years since qualification. • 55% of participants received post-graduate training, mostly as a one off lecture • 55% of participants had read the manual Child protection and the dental team • 22% of participants were sent a copy of their local child protection guidelines when they first started work • 15% of participants had never had any form of CAN training • 21% of participants were aware of interagency training in CAN available in their area • 19% of participants thought GDPs were adequately trained about CAN • 73% of participants would like further education in CAN detection • 78% of participants would like further education in CAN reporting

Laud, Gizani, Maragkou, Welbury & Papagiannoulis (2013) Greece	
Materials & Sample	• A structured questionnaire adapted from a previous study by Cairns et al, 2005a and modified was used. The target population was 440 dentists registered with the Dental Associations of Athens and Piraeus in Greece. • A total of 368 respondents
Knowledge on forms of abuse	• N/A
Suspected/Reported cases of abuse and legal issues	• 13% of dentists suspected child abuse and 35% suspected neglect at one or more occasion during their professional career. Female dentists were more likely to suspect neglect. 18% of those who suspected CAN recorded so in the medical records and only 6 dentists made an official report. Females were less likely to report suspected CAN. 37% of dentists prefer to make a report to a non-profit organization that defends for the rights of children; 33% the police and 32% social services. • 33% prefer to discuss a suspected case of CAN with a colleague, 21% prefer the non-profit organization, social services and a psychologist, 13% the child's relatives, 10% a lawyer, 9% police and 4% the children's hospital.

Barriers	• 44% doubt over diagnosis • 20% fear of consequences for the child • 18% nothing would prevent me • 17% do not know • 17% unaware of agency responsible • 9% Involvement in legal proceedings • 3% Consequences to my profession • 3% Possible threats of violence • 2% Other
Education and training	• 77.4% are not well informed on the management of CAN and 92.1% are interested in more information. 97% of dentists thought that CAN training should be part of University education; 57% preferred lectures and 50% preferred meeting with representatives of agencies that deal with CAN

6.18 ORAL PRESENTATION ABSTRACT 2014

Presented at the King Saud University 15th International Dental Conference the 25th for the Saudi Dental Society, Riyadh, January 2014.

EFFECTIVENESS OF A WEB-BASED CHILD PROTECTION TRAINING PROGRAM DESIGNED FOR DENTAL PRACTITIONERS.

Abstract:

Purpose: Safeguarding children has become an integral part of dental training. The purpose of this research was to develop a web-based training program in basic awareness in child protection as well as evaluate the effectiveness the training has on dental practitioner's knowledge, rate the program and determine the effect it has one month after taking the course in hopes that this research may impact dental continuing professional development in safeguarding children in Saudi Arabia.

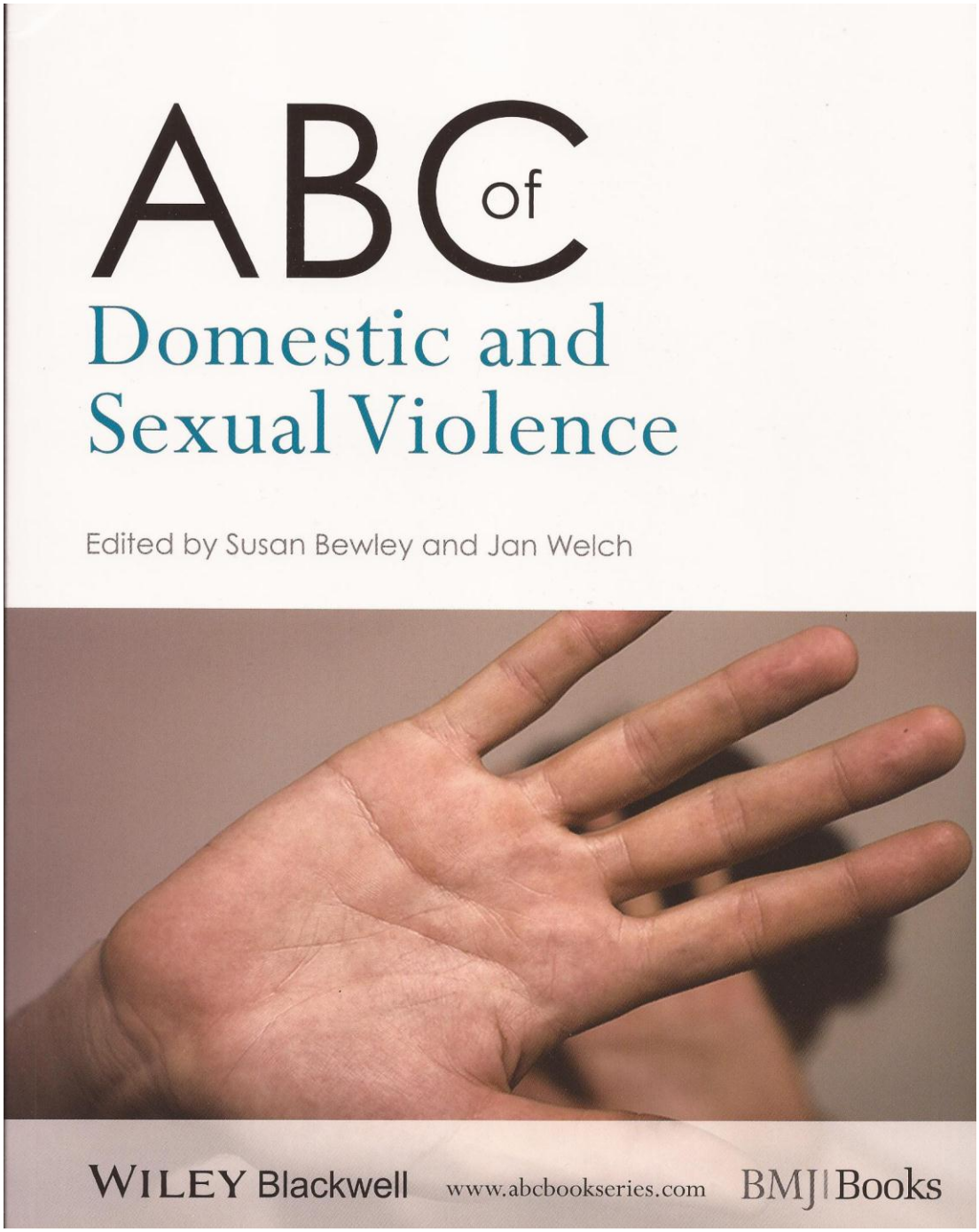
Methods: An invitation was sent to dental practitioners registered with the Saudi Dental Society to join the research. Volunteers had to complete a 3-4 hour online training program that consisted of a pre and post-training surveys, a post training questionnaire rating the survey and a one month post-training survey.

Results: 82 participants completed the whole training package and 62 completed the one month post-training survey. More than half these dentists (57.3 per cent) worked in Universities and 54.9 per cent were GDPs. The

results of the study show that there was a significant increase in knowledge after taking part in the child protection training program in comparison to their baseline knowledge ($P < 0.001$). Very good appraisals were given to the program upon rating it. Since the training program, 21 per cent have or will adopt a child protection policy in their practice, 29 per cent identified a staff member to lead on child protection since the program, almost all participants have been aware of child abuse and neglect (CAN) signs in their daily practice and 27.4 per cent have made a report of a suspected case of CAN in the last month since the training.

Conclusion: The web-based training program in child protection received positive appraisal from dental practitioners and dental students living in Saudi Arabia. The program was effective in increasing knowledge and changing attitudes to be more positive and proactive in safeguarding children.

6.19 CHAPTER 14: THE DENTAL TEAM IN ABC OF DOMESTIC AND SEXUAL VIOLENCE, 2014.



CHAPTER 14

The Dental Team

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OVERVIEW

- Dentists have a professional duty of care regarding abuse, neglect and violence
- Physical abuse often manifests in head injuries
- Dentists can be professionally isolated
- Training and procedures are needed to overcome this

Context of dental consultation

General dental practitioners (GDPs) have a professional duty of care to identify and respond to domestic abuse, neglect and sexual violence when observed in their patients. Furthermore, the dental team may be ideally placed to detect some forms of violent crime; physical abuse often manifests as an assault on the person's head and face, and such injuries are likely to present at dental practices. Despite this, a number of perceived barriers exist to the dental team's becoming involved in protecting vulnerable patients. These include a lack of knowledge of the area, the isolation of dentistry from other health care providers, the perceptions of dentists regarding their role in protection of vulnerable patients and a disproportionate focus in dental research on child abuse.

Dentists' knowledge and skills

One of the greatest problems is a lack of knowledge of the signs of abuse and the mechanisms for dealing with instances of abuse when identified. Many GDPs also have little confidence in dealing competently with domestic and sexual violence. Since 2005, mandatory training in the protection of vulnerable patients has been introduced as part of the core continuing professional development requirements for continued registration with the General Dental Council.

GDPs are often isolated from other health care professionals and from people involved in social services or law enforcement. It is thus more difficult for GDPs to consult informally with others about their concerns or to learn about protection mechanisms through experience or observation.

Dentists may not feel that recognising and reporting abuse is their responsibility. In the case of reporting domestic violence, they may feel that such actions will have detrimental consequences for themselves and their practice and will involve them in complex social and legal issues.

It is also true that dental research in the UK has given considerable attention to orofacial signs of physical abuse in children, whereas far less attention has been paid to domestic violence, emotional abuse and sexual abuse.

Threshold of suspicion

The neglect of domestic violence and the abuse of vulnerable adults in the mainstream UK dental literature suggest that these are areas that should be targeted in future educational programmes for dentists, as they will see patient with problems (see Box 14.1). As with child abuse, the recognition and management of domestic violence and the abuse of vulnerable adults are discussed more fully in the dental literature emanating from the USA.

Box 14.1 **Case scenario**

A 34-year-old mother attends the dental surgery accompanied by her rather clingy 7-year-old son on a Tuesday morning. She complains of pain from a broken tooth in her upper-left jaw and a clicking noise and pain coming from her temporomandibular joint. She has a healing bruise under her left eye, which is only partially masked with make-up. Looking at the notes, you see she has a frequent history of missed appointments and problems in paying for previous treatment. On examination, she shows signs of pain and has a broken crown on her upper-left lateral incisor. She appears to be guarding her arms, which you cannot see because she is wearing long sleeves.

Concerns

1. There is obvious evidence of injury, and possibly additional injuries.
2. The mother may be financially dependent upon her partner, both for treatment and for money more generally.
3. The child is at risk in a home where there is domestic violence.
4. The boy is accompanying his mother and thus is not in primary school.
5. There is a history of missed dental appointments.

ABC of Domestic and Sexual Violence, First Edition.
Edited by Susan Bewley and Jan Welch.

Possible actions

- Discuss your findings and concerns with the patient and explain the treatment needed.
- Deliver treatment in the short term for the injuries and plan long-term management of the broken dentition.
- Keep clear and accurate documentation in the clinical records of the extra- and intra-oral findings, as well as of any discussions that take place in the surgery, using the patient's language as much as possible.
- Discuss concerns with a senior colleague as appropriate.
- Enquire whether the child or any of his siblings are registered at the local child protection register held by children's social services within the area in which they reside.
- Arrange for recall appointments.
- Contact the local safeguarding team.

Box 14.2 shows 'red flags' for abuse and violence that might present in the dental consultation. The principles of sensitive questioning and referral are similar to those described in other chapters (see for example Chapters 3 and 7).

Box 14.2 **'Red flags' for abuse and violence presenting in the dental consultation**

- Bruise on the cheek (leaving finger marks and often on the left side of the face).
- Bruise on the ear (may be a result of pinch marks).
- Petechia or ecchymosis of the mucosa and soft or hard palates.
- Discoloured teeth from previous trauma.
- Fractured, displaced or avulsed teeth.
- Facial bone/jaw fracture.
- Malocclusion as a result of fracture to maxilla or mandible.
- Burns (chemical, scalding liquids).
- Bite marks.
- Inappropriate clothes for the weather, e.g. a loose sweater in hot weather.
- Aggression/hostility.
- Lack of social responsiveness/passivity.
- Detachment.
- Anxiety/depression.
- Challenging behaviour.
- Poor attention span.
- Low self-esteem.
- Substance abuse.

Ultimately, it is the professional responsibility of all GDPs to act in the best interests of their patients. This means ensuring that all members of the dental team are trained in the recognition and management of abuse and that procedures are in place to make the dental surgery a safe place for all patients to attend (see Box 14.3).

Box 14.3 **What should dentists do?**

- Find out about abuse and violence.
- Provide confidential consultation.
- Be able to ask questions sensitively (see Chapter 7).
- Empathise.
- Document (as records may be required for future civil or criminal actions).
- Advise about sources of help and local resources.
- Develop policy around adult and child protection.

Further reading

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Sinha, S., Acharya, P., Jafar, H., Bower, E., Harrison, V. & Newton, T. (2005) *The Management of Abuse: A Resource Manual for the Dental Team*. Stephen Hancocks, London.

6.20 KNOWLEDGE, ATTITUDES AND EXPERIENCE OF DENTISTS LIVING IN SAUDI ARABIA TOWARD CHILD ABUSE AND NEGLECT. THE SAUDI DENTAL JOURNAL, 2014.

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ORIGINAL ARTICLE

Knowledge, attitudes, and experience of dentists living in Saudi Arabia toward child abuse and neglect

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KEYWORDS

Child abuse;
Child neglect;
Child protection;
Dental team;
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Abstract *Aim:* To analyze the experience and knowledge of dental practitioners in Saudi Arabia regarding the identification of child abuse and neglect (CAN), to identify barriers that prevent the reporting of suspected cases of child maltreatment by dental practitioners, and to assess the need for training dentists in child protection.

Methods: A self-administered, web-based questionnaire was emailed to all of the members of the Saudi Dental Society (n = 7352) in 2012.

Results: The respondents (n = 122) demonstrated good knowledge of the forms and indicators of CAN. Moreover, a large proportion (59%) had experienced a case of child abuse or neglect in their practice over the previous five years. However, only about 10% of these respondents made a report. Fear of family reprisal, lack of certainty about the diagnosis of child maltreatment, and uncertainty about case management were critical barriers to the reporting of the suspected child maltreatment. In addition, only 20.9% of the respondents reported having knowledge of a child protection policy in their workplace.

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Conclusions: Based on the results of this survey, it appears that the level of knowledge among the respondents regarding the forms and indicators of CAN is good. However, a large proportion of respondents did not take action regarding suspected cases of CAN in their practice over the past five years. Therefore, additional resources and training are needed to support the identification and management of cases of child maltreatment by dental practitioners.

1. Introduction

Child abuse and neglect (CAN) are significant problems worldwide. In particular, a substantial increase in the report of cases of CAN has occurred in Saudi Arabia, with 616 CAN cases registered in 2011 (The National Safety Program Annual Report, 2011). This is in comparison with 80 registered cases in 2010, 73 cases registered in 2009, and 65 cases registered in 2008 (The National Safety Program Annual Report, 2010). Although these numbers only represent hospital-based reported cases of CAN, these statistics do reflect an increased awareness among physicians regarding CAN cases. Furthermore, there is a legal obligation for health care providers in Saudi Arabia to report suspected cases of CAN.

CAN has been defined by the World Health Organization as, "Every kind of physical, sexual, emotional abuse, neglect or negligent treatment, commercial or other exploitation resulting in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power" (World Health Organization, 1999). Thus, this definition includes both considerations of action (physical, emotional, or sexual abuse) and omission (neglect). The potential for irreversible damage to a child developmentally, mentally, and/or physically, depends on both the extent of the abuse and the age of the child.

Based on the regular contact that dental practitioners have with children and their families, these health professionals are in a favorable position to observe abnormal child–parent behavior, and to identify and report suspected cases of CAN (Jessee, 1999). It is also possible to diagnose child dental neglect, as well as neglect in general, upon dental examination. In 1992, Da Fonseca et al. reported that "abusive caretakers rarely take the child to the same physician, but they are not cautious about dentists". This observation further supports the importance of dental evaluations and the awareness of dental practitioners regarding CAN.

It has been reported that the physical abuse of children manifests in the oro-facial region in 50–77% of abuse cases (Hibbard and Sanders, 2004), and this is an area that dentists routinely assess. However, despite the opportunities to detect child maltreatment, dentists are reluctant to report CAN due to lack of certainty about the diagnosis of abuse, lack of knowledge about the referral procedures for cases of CAN, fear of negative effects on the child or the child's family, and concerns about confidentiality (Al-Habsi et al., 2009; Cairns et al., 2005; Harris et al., 2009a,b; John et al., 1999; Manea et al., 2007; Owais et al., 2009; Welbury et al., 2003; Uldum et al., 2010). Similar results have been published for dentists in Jordan (Sonbol et al., 2011; Owais et al., 2009). However, to our knowledge, there are no published data available regarding dentists' perception of their role in detecting and reporting suspected cases of CAN in Saudi Arabia, nor are there any studies published on the knowledge of dentists in Saudi Arabia regarding the signs, symptoms, and risk factors of CAN.

Therefore, the purpose of this study was to analyze the experience and knowledge reported by dental practitioners in Saudi Arabia regarding the identification of CAN, to identify dental practitioners' attitudes toward reporting CAN, to identify the barriers that prevent the reporting of suspected cases of child maltreatment, and to assess the need for additional training in child protection.

2. Materials and methods

This study was conducted at King's College London. Therefore, ethical approval was obtained for this study from the Biomedical Sciences, Dentistry, Medicine, and Natural & Mathematical Sciences Research Ethics Subcommittee (BDM) of King's College London Research Ethics Committee.

A web-based questionnaire was distributed via email to all dentists registered with the Saudi Dental Society in February 2012. A cover letter, a link to the survey platform (SurveyMonkey©), and an information sheet were enclosed in the email which stated that responses would be anonymous and confidential. Participants were given six weeks to complete the survey. To maximize response rates, two reminder emails were sent two weeks and four weeks after the initial distribution of the questionnaire. The reminders were sent to all of the members of the Saudi Dental Society and they included a link to the survey as suggested by Dillman (2007) and Edwards et al. (2007). General dentists and dental practitioners from all specialties were included in this study. However, dentists with less than one year of experience were excluded. While the intent was to maximize the representativeness of the sample, the results analyzed are only those from the dentists that responded. Moreover, there are no published data on the demographic characteristics of dental practitioners in Saudi Arabia to compare the current data.

2.1. The questionnaire

The questionnaire was written in the English language based on previous similar studies (Ramos-Gomez et al., 1998; John et al., 1999; Kilpatrick et al., 1999; Cairns et al., 2005; Thomas et al., 2006; Al-Habsi et al., 2009; Chadwick et al., 2009; Harris et al., 2009a,b). The questionnaire was reviewed by two psychologists with knowledge of this field. The content validity of the questionnaire was tested by conducting a pilot survey of postgraduate students studying at the Dental Institute, King's College London ($n = 30$). Unfortunately, it was not practically possible to conduct the pilot study with the target population, since the researchers were located in the United Kingdom. However, the pilot sample did include students of

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Saudi origin that were studying in the United Kingdom. The postgraduate students were asked to comment on the comprehensiveness of the material covered by the questionnaire (e.g., did the measures reflect all aspects of CAN), to indicate which aspects of CAN were not covered, and to address the clarity of the question and response formats. The criterion-related validity of the questionnaire could not be tested since standard measures of the constructs that were measured are not currently available. Some comments and modifications that were received were incorporated into the final version of the questionnaire.

The questionnaire was composed of five sections:

The first section included ten questions that were designed to survey the characteristics and demographics of the respondents, including age, gender, nationality, professional experience, education, specialty, place of work, and the number of children seen per week.

The second section consisted of questions designed to survey the respondents' ability to recognize different forms of CAN (the seven items surveyed were all considered to represent forms of abuse, except for 'non-injurious spanking'), risk factors for CAN (13 items), manifestations of physical abuse (6 items), and indicators of CAN (9 items which are likely to be indicators of CAN, except for bruises on a toddler's forehead).

The third section of the questionnaire consisted of six questions that were designed to address the respondents' professional experience with CAN, the number of children with neglected dentition that had been evaluated in their practice, the history of suspected child abuse cases for their practice, actions taken for suspected cases, the number of suspected CAN cases observed in the last five years, and whether their practice has a protocol in place for dealing with CAN in the workplace.

The fourth section mainly included questions regarding barriers that potentially interfere with the reporting of suspected cases of CAN (11 items).

Lastly, the fifth section was composed of five questions that addressed the history of training in child protection by the respondents, as well as the opinion of the respondents regarding the need for continuing education in recognizing and reporting CAN.

The response formats for these sections included yes/no answers, multiple choice answers, or the selection of a response according to a five-point Likert scale. The latter was scored from 1 to 5 to represent answers of "strongly disagree", "disagree", "neutral", "agree", and "strongly agree", respectively. The Likert scale is considered reliable in providing an approximate ordering of respondents' concerns regarding a specific attitude (Oppenheim, 1992).

Data received were coded and analyzed using the Statistical Package for Social Sciences (IBM SPSS) version 20 software.

Table 1 Academic degrees and specialties of the respondents.

Topic surveyed	Answer	Responses *N* (%)
Last degree obtained	Bachelor's degree	57 (46.7)
	Master's degree	36 (29.5)
	PhD degree	11 (9.0)
	Fellowship	1 (0.8)
	Board member	16 (13.1)
	Other	1 (0.8)
Specialty	General dentistry	49 (40.2)
	AGD*	2 (1.2)
	Restorative dentistry	11 (9.0)
	Pediatric dentistry	16 (13.1)
	Orthodontics	8 (6.6)
	Periodontics	7 (5.7)
	Maxillofacial surgery	3 (2.5)
	Prosthodontics	9 (7.4)
	Endodontics	14 (11.5)
	Oral medicine	–
	Dental Public Health	3 (2.5)

* Advanced general dentistry.

3. Results

3.1. Demographic characteristics of the respondents

A total of 163 Saudi dentists responded to the web-based survey that was distributed to all dentists registered with the Saudi Dental Society. However, 41 dentists only completed the demographic section of the questionnaire, and therefore, their incomplete questionnaires were excluded from the study. For the remaining 122 participants, the male-to-female ratio was 1:1, consisting of 61 dentists of each gender. A total of 90/122 (73.8%) dentists were ≤40 years of age, while 32/122 (26.2%) were >40 years of age. Regarding experience, 108/122 (88.5%) respondents reported practicing dentistry for less than 20 years, while 14/122 (11.5%) had more than 20 years of experience. Most of the respondents worked in a university setting (41%), while the remainder were employed in private or public hospitals and clinics. The academic degrees and specialties of the respondents are summarized in Table 1.

3.2. Knowledge of CAN

Dentists were asked to identify different forms of CAN by agreeing or disagreeing with statements that represented different forms of abuse. Nine out of ten items represented abuse, with the exception being 'non-injurious spanking'. The average total score for the respondents when the latter was excluded was 84.2%. Fig. 1 shows the distribution of responses according to each item.

When asked about risk factors of CAN, the responses varied among the respondents. Fig. 2 presents the proportion of dentists who correctly identified risk factors associated with CAN.

3.3. Observed indicators of CAN

When asked about the most common manifestations of physical abuse, the total average score of the respondents was 73.3%. The highest percentage of respondents (86.1%) indicated that skin and mucosal burns were the most common manifestations, followed by oro-facial injuries (84.4%). In addition, 69.7% of respondents indicated that bruises on the neck were manifestations of physical abuse, while 63.1% agreed 'injuries to soles of feet' and 'bone fracture' represented manifestations of physical abuse.

For a high percentage of respondents (81.1%), bruises on the soft tissue of the cheeks represented an indicator of CAN, while only 52.5% of respondents indicated that intra oral injuries were a common indicator of CAN. Furthermore, regarding 'bruises on a toddler's forehead', 67.2% agreed this represented an indicator of CAN. Fig. 3 shows the proportion of dentists who identified various indicators as those of CAN.

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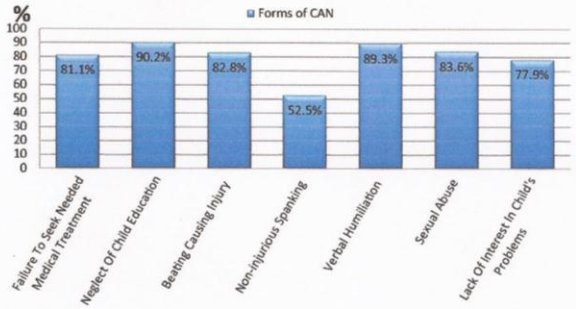

Figure 1 Proportion of agreement among respondents regarding proposed forms of CAN.

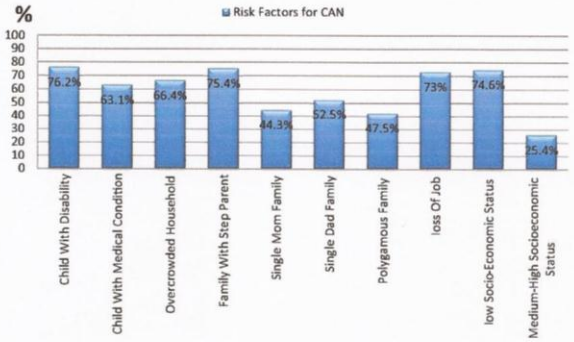

Figure 2 Proportion of respondents who correctly identified risk factors for CAN.

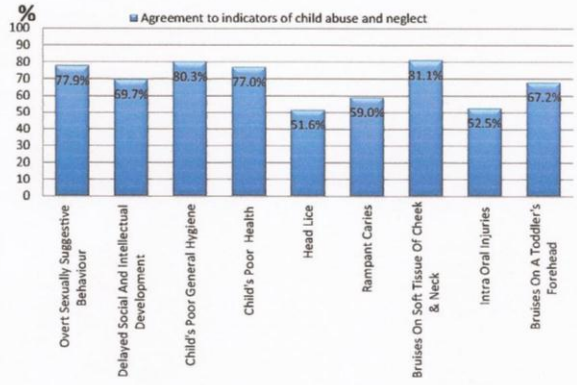

Figure 3 Proportion of respondents who correctly identified indicators of CAN.

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Table 2 Experience of respondents with children exhibiting neglected dentition.

Topic surveyed	Answer	Responses total = 122) *N* (%)
Approximately how often do you see children with neglected dentition?	Children are not evaluated	20 (16.4)
	No cases observed	32 (26.2)
	One case a day	11 (9.0)
	More than one case a day	22 (18.0)
	One case a week	10 (8.2)
	One case a month	14 (11.5)
	One case every 6 months	12 (9.8)
	One case a year	–

Table 3 Frequencies of the type of CAN cases suspected by respondents in the last five years.

Type of abuse	Answer	KSA Sample (n = 122) *N* (%)
(1) Physical abuse	Up to 5	47 (38.5)
	>5	14 (8.3)
(2) Emotional abuse	Up to 5	39 (32)
	>5	24 (19.7)
(3) Sexual abuse	Up to 5	30 (24.6)
	>5	0
(4) Neglect	Up to 5	19 (15.6)
	>5	44 (36.1)

3.4. Experience with suspected cases of CAN

Of the respondents, 16.4% did not treat children. Therefore, of those who routinely treated children, 27.0% reported observing at least one case a day of neglected dentition in their practice. The experience of respondents with children exhibiting neglected dentition is summarized in Table 2.

A total of 72/122 (59%) respondents reported evaluating a child suspected of being subjected to CAN in the last five years. Table 3 describes the types of child abuse suspected by dentists in these cases. However, while 84.3% of all respondents reported their willingness to report a suspected case of child abuse, 19.7% of the dentists with CAN cases in their practice did not take any action. Moreover, 39.4% only documented the signs of abuse in the patient's medical record. A very small percentage of dentists (7.0%) contacted social services, and contact of police was least popular among the respondents, with only 2.82% reporting this action (Table 4). In addition, only 20.9% of the respondents reported knowledge of a child protection policy in their workplace.

Dentists were able to give more than one response to the question inquiring about whom to discuss or refer concern in cases of suspicion of CAN. The majority of dentists (62.6%) reported that they preferred to discuss suspected cases of CAN with a social worker. In addition, 31.3% preferred to discuss suspected cases with the caregiver, 55.7% preferred to discuss the case with a senior staff member, 38.3% preferred to consult a colleague, and 22.6% preferred to discuss suspected cases with the police.

3.5. Barriers to reporting suspected cases of CAN

In general, fear of family violence toward the child was reported as the main barrier (88%) preventing the respondents from reporting suspected cases of CAN. In addition, respondents reported lack of certainty about the diagnosis of CAN (80%) and lack of knowledge in referral procedures of CAN (79%) as barriers to reporting suspected abuse cases (Fig. 4).

3.6. Present knowledge and attitudes toward training programs for child protection

Only four dentists reported attending a training program in child protection (3.3%), although the majority of respondents (94.7%) agreed that dentists' knowledge of child protection protocols is important. Similarly, 93% of respondents agreed that additional training is required in this field. However, 47.8% of respondents reported being confident in recognizing signs of CAN'. Further details regarding their responses are provided in Table 5.

4. Discussion

While the limitations of this study include the low response rate and a sample consisting mainly of academics rather than practitioners, the results provide valuable insights into a very important issue and significantly contribute to our knowledge of the attitudes and experience regarding CAN by health professionals in the dental field in Saudi Arabia.

4.1. Knowledge of the different forms of CAN

To our knowledge, this cross-sectional study to identify the knowledge and attitudes of dental practitioners in Saudi Arabia toward CAN is the first to be conducted in Saudi Arabia. However, comparable studies have previously been published

Table 4 Actions taken by respondents with suspected cases of CAN in their practice (n = 71).

Actions taken regarding CAN cases	Answers reported	
	N	%
(1) Dismissed/no action taken	14	19.72
(2) Documented signs of abuse in patient's records	28	39.40
(3) Discussed the case with the child's caregiver	32	45.07
(4) Discussed the case with a senior staff member	29	40.85
(5) Discussed the case with a colleague	32	45.07
(6) Contacted social services	5	7.04
(7) Contacted police	2	2.82

Percentages add up to more than 100 because participants could indicate more than one response.

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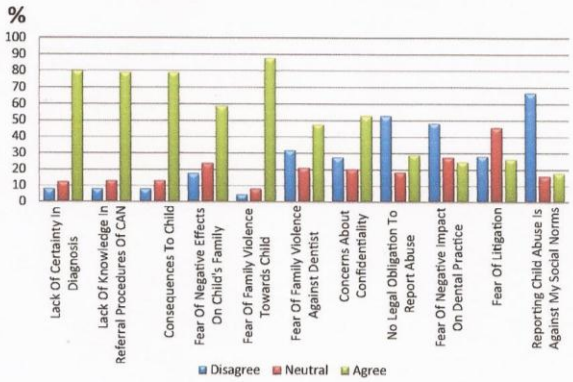

Figure 4 Barriers to reporting suspected cases of CAN perceived by respondents.

Table 5 Knowledge of and attitudes toward training programs of child protection by respondents.

Statement for consideration	Answer	Responses (total n = 113) N (%)
(1) Knowledge about child protection protocols is important	D	1 (0.9)
	N	5 (4.4)
	A	107 (94.7)
(2) More training regarding child protection is needed for dentists in this field	D	1 (0.9)
	N	7 (6.2)
	A	105 (92.9)
(3) I can confidently recognize signs of child abuse	D	25 (22.1)
	N	34 (30.1)
	A	54 (47.8)
Number of missing data		9

D: Disagree, N: Neutral, A: Agree.

for dentists in the United Arab Emirates (Hashim and Al-Ani, 2013) and Jordan (Owais et al., 2009; Sonbol et al., 2011).

In the present study, a score of 80% was set as the cut-off between adequate knowledge and deficient knowledge (Habib, 2012). Most of the respondents for this survey were found to have adequate knowledge of different forms of CAN, which included physical, emotional, and sexual abuse, as well as neglect, in the questionnaire distributed. The average score was 84.2%, when 'non-injurious spanking' was excluded, and similar results were published by Habib (2012) in a study involving the knowledge of pediatricians in Saudi Arabia regarding CAN. In a study of dentists in Jordan, 97% of both general dental practitioners (GDPs) and specialists were able to identify physical abuse, 92% identified sexual abuse, and 84% identified emotional abuse and neglect as forms of child maltreatment (Owais et al., 2009).

Interestingly, 52.5% of the current respondents reported that non-injurious spanking (corporal punishment) was also a form of CAN. This result is surprisingly high given that a 2012 report of the Global Initiative to End All Corporal Punishment of Children in Saudi Arabia revealed that corporal punishment was still lawful in the home. Furthermore, Basic Laws (1992) that prevent abuse are not interpreted as prohibiting corporal punishment as part of childcare. The present finding may be explained by the high percentage of respondents who held faculty positions at a university (41%), and thus may have greater exposure to the literature on child protection. In addition, 13% of the respondents were pediatric dentists, and this subset of respondents might also have increased exposure to the literature on child abuse.

4.2. Knowledge of CAN risk factors

Knowledge of the factors that increase the risk of CAN was found to be deficient based on the questionnaires returned. This result emphasizes the need for a better understanding of the causative factors that can increase the risk of CAN. These topics could be incorporated into a training program for dentists in Saudi Arabia. Moreover, such information is vital for dentists to have a comprehensive understanding of the various aspects of child protection and to be better able to detect suspected cases of CAN. In a study conducted in Jordan, more than half of the dentists surveyed (57%) reported that CAN occurred mostly in low socio-economic households, rather than in middle or high socio-economic classes (Sonbol et al., 2011). Correspondingly, 74.6% of the current respondents conveyed that CAN was more common in low socio-economic classes, and 28% disagreed with the statement that CAN occurs in medium to high socio-economic classes. In addition, Hobbs and Wynne (2001) previously reported that low socio-economic status, poverty, and temporary housing are highly and consistently linked to the incidence of CAN. In another study (Gillham et al., 1998), a link between parent unemployment and the risk of child maltreatment was identified. Despite these findings, however, it is important for healthcare providers to recognize that child maltreatment is not confined to poverty and low socio-economic classes.

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4.3. Common manifestations of physical abuse

The respondents for the present study exhibited deficient knowledge regarding common manifestations of physical abuse. Moreover, similar results have been reported in previous studies (Owais et al., 2009; Sonbol et al., 2011; Hashim and Al-Ani 2013). Taken together, these results indicate that a need still exists for training of health professionals in child protection.

4.4. Observed indicators of CAN

Regarding observed indicators of child abuse, most of the respondents (81%) indicated that bruises on the soft tissue of the cheek and neck were indicators of child abuse. Similar findings were reported by Owais et al. (2009) for dentists in Jordan. For bruises on a toddler's forehead, 68% of respondents considered this an indicator of abuse. Similarly, a study of United Arab Emirates dental students by Hashim and Al-Ani (2013) reported that 79.2% of the students agreed that physical abuse usually occurs in areas overlying bony prominences. Although, it is important to consider that toddlers are known to be more prone to accidental falls in their first years of walking that are likely to lead to injuries over bony prominences. Distinguishing between these two possibilities is likely to be part of a child protection training program.

4.5. Experience with suspected CAN

The proportion of respondents who had suspected their patients represented cases of abuse in the last five years is higher (59%) than previously reported (Ramos-Gomez et al., 1998; Cairns et al., 2005; Manea et al., 2007). This may be due to the large percentage of respondents in the present study that possessed advanced degrees, in combination with the large number of pediatric dentistry specialists who responded and would be predicted to evaluate a greater number of children. Owais et al. (2009) reported a high percentage (42%) of dentists in Jordan who suspected CAN cases, and Sonbol et al. (2011) reported a percentage of 50%. In contrast, Al-Buhairan et al. (2011) reported that only 20% of school professionals in Saudi Arabia had encountered at least one case of child maltreatment throughout their career. Al-Buhairan et al. (2011) also reported that only 22% of the dentists evaluated were aware of the United Nations Convention of the Rights of the Child (UNCRC) Article 19, or national policies addressing child maltreatment (United Nations Human Rights. Convention on the Rights of the Child, 1989). Thus, the lower percentage of encountered CAN cases may not represent the actual incidence of CAN but rather undiagnosed cases of child maltreatment.

Child dental neglect is perceived to be within the scope of child neglect and thus should be addressed seriously. In the present study, around one quarter of respondents reported seeing at least one case of dental neglect per day. This may be due to inadequate dental care and diet by the caregiver, or inaccessibility of dental care to these families. Since many families face difficulties in accessing dental care, clinicians need to determine whether dental services are available to the family when considering dental neglect. Dental neglect is considered a form of CAN when a caregiver is aware of a child's need for dental care but willfully denies the child from dental care (American Academy of Pediatrics Committee on Child Abuse and Neglect and the American Academy of Pediatric Dentistry, 2010).

4.6. Action taken regarding incidences of suspected CAN

The results of the present study indicate that a gap exists between suspected cases of CAN (59%) and the reporting of suspected incidences. For example, almost one in every five respondents did not take action after suspecting a CAN case. Moreover, only 39.4% of the respondents indicated that they had recorded suspected findings in the affected child's medical record. Good record keeping is essential in dentistry for legal purposes, and especially if CAN is suspected. Correspondingly, a comprehensive record should include injuries observed by the dentist along with any other significant findings, including any abnormal child-caregiver interactions (Cairns et al., 2005). To obtain evidence for child protection procedures, X-rays and photographic evidence should be obtained with consent from the caregiver. A special form for recording findings related to suspected cases of CAN should also be available in dental clinics. Accordingly, dental practitioners should be trained in the handling of such cases and in the completing of these forms.

It was not surprising to find that almost half of the dentists who indicated they had experience with suspected CAN cases discussed these situations with a colleague. Colleagues are generally readily accessible, and it is understandable that a dentist would feel more comfortable discussing such a sensitive matter within his professional circle. Alternatively, 62.6% of respondents preferred to discuss CAN cases with a social worker. However, only 7% of these reported actually contacting a social worker. This may be due to a lack of communication that typically exists between dental practitioners and social workers. Moreover, contact of the police was the least often reported action taken. Similar findings have also been reported in other studies. For example, Owais et al. (2009) reported that only 20% of the dentists they surveyed reported suspected cases of CAN, while Sonbol et al. (2011) reported that only 12% of their cohort reported cases of CAN.

4.7. Barriers to reporting suspected cases of CAN

Under-reporting of CAN cases by dentists and healthcare providers is a problem that challenges many societies. The main barrier to reporting suspected CAN cases in the present study was fear of violence toward the child (87.7%). Similarly, 66% of GDPs in a study by Al-Habsi et al. (2009) reported fear of an unknown consequence to the child as a barrier (79%). Since corporal punishment is still acceptable culturally and under the law in Saudi Arabia, this supports the reported fear of dentists regarding a child's well-being. Lack of confidence in child protection services and their ability to handle such sensitive cases has also been identified as a potential barrier for the reporting of CAN cases (John et al., 1999).

'Lack of certainty about the diagnosis' was the second most common barrier reported by respondents of the present study (79.8%). Similarly, this was the most cited barrier to referral in studies by Harris et al. (2009a,b) and Cairns et al. (2005). Interestingly, dental practitioners are not required to diagnose a case before making a referral; diagnosis is the shared responsibility of the child protection team Harris et al.

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(2009a,b). In Saudi Arabia, child protection teams consist of a pediatric physician, a psychologist, and a social worker (Almuneef and Al-Eissa, 2011). In the present study, lack of knowledge of referral procedures was also reported as a barrier to reporting suspected CAN cases (78.9%), and only 21% of respondents reported knowledge of an existing child protection protocol in their workplace. Uncertainty about referral procedures was also reported by Sonbol et al. (2011) as a major concern that prevented dentists from reporting suspected cases of CAN in Jordan. However, health care professionals are responsible for reporting and preventing child maltreatment, and they must seek the necessary knowledge in reporting procedures if needed. In Saudi Arabia and Jordan, a lack of child protection training programs contributes to this situation.

Fear of negative effects on the child's family was reported by 58.8% of respondents as a barrier to the reporting of suspected CAN cases. Similarly, almost half of the dentists surveyed in this study reported 'family violence against dentists' as a barrier. In contrast, Sonbol et al. (2011) reported that only a quarter of the dentists they surveyed expressed fear from the affected family or anger of the parents. Another concern expressed in the current study was regarding confidentiality associated with reporting CAN cases. A similar concern was reported in a study by Owais et al. (2009). Unfortunately, approximately half of the current respondents disagreed with the statement that 'dentists have no legal obligation to report abuse'. This percentage is surprisingly high, considering that a large percentage of the respondents reported holding university faculty positions, postgraduate degrees, and pediatric dentistry as a specialty. Therefore, it is possible that the dental practitioners in Saudi Arabia may include an even larger percentage of dentists who feel they have no obligation toward child protection. Conversely, the least reported barriers to the reporting of CAN cases included: fears of a negative impact on dental practice, fear of litigation, and reporting child abuse is against social norms.

4.8. Child protection training

The majority of respondents had not attended any type of formal training in child protection, and 92.9% agreed that such training is required for dentists. Similar findings were reported by Al-Buhairan et al. (2011) with only 1.9% of school professionals surveyed having attended any sort of training in child protection. However, in the latter study, 69.3% of those surveyed were willing to attend training.

Unfortunately, inadequate training in child protection is evident in this study, and was evident from pediatricians in Saudi Arabia surveyed by Habib (2012) as well. By publishing these results, it is hoped that child protection will be better recognized and appreciated by health care providers. Furthermore, these results indicate that there is a need for clear guidelines, regulations, and training related to child protection. Good communication is also needed between health care providers and local authorities, child protection teams, and pediatricians in order to establish protocols to deal with CAN cases.

5. Limitations

This study was associated with several limitations. First, the questionnaire was initially completed by postgraduate dental students studying at King's College London, rather than a Saudi population. However, the goal of the pilot testing was to focus on the comprehensiveness and comprehensibility of the material covered by the questionnaire.

Secondly, the total number of participants in this study was 122, despite distribution of the questionnaire and reminders to all dentists registered with the Saudi Dental Society. It is possible that this email-based contact may have been labeled as "SPAM" or "junk email", thus lowering the possibility that the recipients actually received the intended emails. In addition, the low rate of return could also be attributed to changes in the e-mail addresses of dentists registered with the Saudi Dental Society, as well as the lack of interest or knowledge in the subject. The questionnaire was also long and this may have discouraged dental practitioners from completing it (Edwards et al., 2007). However, the survey was designed to be comprehensive, and similar studies included comparable sample sizes (Kilpatrick et al., 1999; Manea et al., 2007; Al-Habsi et al., 2009; Habib, 2012).

Thirdly, a large percentage of respondents in this study were academics. Therefore, the results obtained are not necessarily representative of the total population of dentists working in Saudi Arabia. However, to our knowledge, there are also no published data regarding the demographic characteristics of dentists living in Saudi Arabia, thereby preventing an analysis of the demographics that characterized the present study. Moreover, knowledge of child protection that is reported in the present study may not represent the actual knowledge of dental practitioners working in Saudi Arabia, and thus, knowledge of CAN may be even lower than what has been reported.

Conflict of interest

The authors have no conflicts of interest to declare.

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